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# Consumer Attitudes toward Sustainable Development and Risk to Brand Loyalty

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**Abstract:** The present study reveals the importance of understanding how business decisions focused on sustainability can impact companies, due to the risks associated with brand loyalty. The relationship between brand loyalty and consumers' environmental viewpoint is investigated, including how consumers' brand loyalty would be impacted after environmental-based expansion decisions are announced. College students from the USA and Romania ( $N = 92$ ) were asked to voluntarily participate in a survey. The Brand Loyalty Scale (BLS) is used to assess brand loyalty before and after a fictitious expansion announcement was made and the New Ecological Paradigm (NEP) scale is utilized to assess attitudes toward sustainability. A paired samples *t*-test analysis reveals a significant positive correlation between NEP scores (attitudes toward sustainability) and brand loyalty. No significant differences are found in attitudes toward sustainability regarding region (Romania and USA) or gender. These results indicate that individuals who generally show concern towards the environment will stay loyal to their favorite companies after sustainability is introduced. Results also indicate that the gap regarding region and gender is slowly closing in attitudes toward sustainability; individuals in developing countries are also showing a major concern toward environmental issues. Males indicate just as much concern toward the environment as females, which is confirmed by other findings in previous literature.

**Keywords:** brand loyalty; consumer behavior; consumer attitudes; green marketing; new ecological paradigm; sustainable development; American students; Romanian students; correlational analysis; regression analysis

## 1. Introduction

In an era of growing concerns over limited natural resources and potential risks to climate change caused by human behavior, sustainable development has become a significant concern and a key guiding principal for society [1]. Based on global realities, the concept of sustainability has been changed over the years to integrate economic, social, and environmental dimensions in its definition [2]. All three dimensions are important in achieving sustainable development, but this paper will focus more on the environmental pillar of sustainability.

For many people, sustainable business practices and consumption are not an option; they are a necessity [3]. Some individuals believe governments, companies, and individual citizens need to create more sustainable societies by taking an active role [4]. Companies may need to approach

their decision-making in terms of sustainable development [5]; in this context, they need to focus more on environmental impacts and apply environmental responsibility into their businesses [6]. Consumers may also need to change their attitudes [7] and behaviors [7,8], while adopting more environmentally responsible ones. If general consumer buying behavior is mainly motivated by benefits and costs, and can “deliver instant personal gain or gratification benefit”, environmentally conscious behavior is trying to achieve a future outcome with benefits for entire society [9]. If consumers become more sensitive to environmental issues, they change their environmental attitudes, preferences and purchases accordingly [10].

Changes to society at the organizational and personal levels can be challenging, and, depending on the business model, adapting sustainable business practices may not even be recommended. The current study sets out to examine if it is worthwhile for organizations to adapt business practices based on the notion consumers are impacted by pro-environmental business decisions. If consumers are impacted to a significant degree, then companies can further examine who is impacted, and to what extent brand loyalty will be impacted.

Integrating sustainable developing goals in an organization’s business strategy requires a long and difficult process because sustainable development cannot be imposed by others. Sustainability will not be embraced as a cultural norm unless people are actively engaged [11]. For leaders that have a pro-environmental worldview, their companies need to be ready to take responsibility and to move towards sustainable business practices.

Consumers’ expectations are changing; they show increased awareness of and concerns for environmental issues and now are considered to be a major determinant in the consumer decision making [12,13]. Consumers who have a pro-environmental worldview play an essential role in achieving sustainable development goals and contribute to the company’s transition towards a sustainable business model. In this context, is vital for companies to understand how consumers think, reasons for buying one product or another, one brand or another, how they decide between multiple alternatives, etc. Analyzing consumer attitudes and behavior can help companies consider strategies used to influence consumers to purchase goods and services. Due to a lack of causal evidence to support the notion consumers are positively impacted by sustainable business practices, consumers’ pro environmental attitudes and potential impact on brand loyalty needs to be examined.

Brands can significantly impact consumers and levels of change [14] and companies can change consumer’s attitude towards sustainable consumption using their brand [15]. Grubor and Milonavov [14] consider that branding has become the story of belonging and pervasion, because it allows consumers to express their personality (interest, attitudes likes and dislikes) through brands they use. An examination of the relationship between brands and consumers emphasize the interdependence between them, meaning that consumers contribute to brand development and success but also brands influence and determine consumer behavior [14].

Customer satisfaction is one of the key elements to driving future business success based on the fact that influences customer loyalty [16] and affects repurchase intentions [17]. Even if they are strongly related [18], researchers such as Neal [19], and Agustin and Singh [20] consider that satisfaction is a key determinant of loyalty but not a sufficient one; others consider these two constructs interchangeable [21]. Torres and Tribó [22] highlighted that degree of customer satisfaction has a major impact on brand equity. Since brand equity can be analyzed from three different perspectives, namely consumer-based, product-based, and financial-based, we will refer to brand equity mainly from customer-based perspective because, from this perspective, brand equity reflects how consumers perceive and react to a branded product or service versus an unbranded offering [23]. Positively related components of brand equity include brand loyalty, perceived quality, brand awareness, brand associations, and other proprietary assets [24]. Brand equity adds value to a product or a service and contributes to companies’ efforts of developing positive customer perception and achieving customer loyalty [25] if its components are managed in a proper way. Brand loyalty is considered to be the measure of the attachment that the customer has towards a certain brand [24,26],

“a behavioral construction connecting to intentions towards repeating purchase” [27] that creates certain advantages for a company including: increases the number of customers, reduces marketing cost, improves the strategic response time to competitive threats, and generates trade leverage. Factors such as price [28], brand name [24,26], perceived quality [29,30], customer satisfaction [31], customer trust [32], and brand design [33] enhance consumer loyalty to a specific brand. A profitable business in this competitive environment requires having a satisfied and loyal customer [34]. Because brand loyalty is always based on trust, Lau and Lee [35] suggest that today’s marketers must focus on building strong consumer-brand relationships, contributing in these ways to accomplishing companies’ goals of maximizing profitability. Moreover, it is vital to maintain these relationships to make sure a company will not suffer a significant loss of consumers that can lead to negative financial outcomes.

In these circumstances, for companies, brand loyalty is one of the critical factors associated with company longevity and success. Companies are encouraged to consider their base customer attitudes and behaviors towards sustainable development, or they can risk an unexpected change to brand loyalty.

The objective of this research is to examine the impact on brand loyalty once consumers are exposed to an organization’s sustainable development plan during a hypothetical company expansion scenario. A quasi-experimental approach is used to discover causal relationships, although the authors recognize a lack of a control group results in limitations to what inferences can be made in this study. It is our goal to open the conversation to a more scientific versus emotional reaction by companies when considering embracing a sustainable business model. The study aims to answer the following two research questions:

1. To what extent will brand loyalty be impacted once consumers are exposed to an organization’s sustainable development plan?
2. How do factors such as gender, age and region influence consumers’ attitude toward sustainability and impact brand loyalty once they are exposed to an organization’s sustainable development plan?

To answer these two research questions, this paper is structured as follows: Section 2 briefly provides theoretical background of the relevant literature; Section 3 addresses the research methodology used in our research; Section 4 provides the findings of our study; Section 5 interprets the results and indicates the limitations of the study; and Section 6 draws conclusions and indicates future research directions.

## 2. Literature Review

### 2.1. Sustainable Development and Sustainability Branding

We confront today various global issues such as climate change [36,37], environmental pollution [38,39], and food and water scarcity [40,41] that perhaps should concern all nations of the world. However, not all countries are prone to take immediate actions to limit or eliminate negative impacts and factors that generate these problems [42,43]. In this context, sustainable development approaches are essential.

The concept of sustainable development is widely used in many areas of activity [44,45]. The Brundtland Commission officially used the concept of sustainable development for the first time in 1987 in the “Our Common Future” report and defines it as the development that meets the needs of the present without compromising the ability of future generations to meet their own needs [46]. The potential conflict between economic growth and environmental protection was mentioned in 1972 at Stockholm during the first United Nations Conference on the Human Environment [47]. A few years later, in 1991, United Nations Environment Program (UNEP) defined the term as improving the quality of human life within the carrying capacity of supporting ecosystems, which is influenced by the social and environmental perspective [48]. While there is no one universally accepted definition of this term,

Daly [49] states that lack of a precise definition of the term “sustainable development” is not all bad. It perhaps assisted to create a significant agreement to advance in support of the idea that it is both morally and economically wrong to treat the world as a business in liquidation.

Sustainable development must be able to find efficient ways to respond and to solve various environmental problems that modern society is confronting. Thus, to embrace sustainable development, companies are often encouraged to change their business models. If traditional business models aim to create value for shareholders, an innovative approach to business models needs to include sustainability in their operational and strategic outlooks.

Customer expectations and subsequent competition in the global marketplace is changing; therefore, companies need to find new ways to interact with customers and address consumer expectations and to respond to the competition. Companies need to deliver quality products and services at low cost, but they must also focus on environmental and social responsibility. Financial performance is not the only major criterion to evaluate company’s value, now an organization’s success depends also on its perceived contribution to society [50].

Sustainable Consumption and Production, and Sustainable Industrial Policy Action Plan developed by European Commission [51] include proposals related to sustainable consumption and production. To become sustainable, companies need to address multiple sustainability challenges. The problem is companies often publicize decisions consistent with a “going green” trend, while failing to consider the potential negative ramifications due to these inconsistent and varying attitudes. Not all consumers value sustainable business practices over decisions leading to more tangible outcomes (e.g., lower prices and higher paying jobs). Companies believe a sustainable marketing strategy will be viewed favorably by the consumer and subsequently improve brand loyalty, but this is not always the case. In a study conducted in South Korea comprised of 350 inbound overseas tourists that visited Seoul, Kim and Lee [52] found that oral tradition is a significant factor that affects brand quality perception and brand image more than price, publicity, and advertisement. This example can help marketers to develop adequate marketing strategies for influencing consumer behavior towards sustainable products and services.

Eccles et al. considered that, to become sustainable, a company needs to follow two steps: first, to reframe the company identity, and then to codify this new identity through employee engagement and mechanism of execution [53]. In this process, sustainable brand strategy plays a key role. The two pillars of a sustainable brand are product sustainability and branding sustainability [54]. In this context, branding sustainability can be found at the intersection between brand impact and sustainability association [54].

It is considered that personal favorite brands are preferred instead of green brands [55] but as consumers become more informed and devoted to green values, they may change their purchase behavior accordingly [56]. Consumer demand preferences are changing and high-quality products consistent with environmental and societal values are often preferred [57]. To be competitive, companies need to take into account green concepts. Kong et al. [58] found that green corporate perception, eco-label, and green product value are positively influencing the consumer’s green purchase intention. Chen [59] stipulated that, to increase green brand equity, companies need to increase green brand image, green satisfaction, and green trust. Green trust is defined as the consumer’s will to depend on a product or a service of a brand as a result of his faith in its environmental reliability [60], and is considered to be a significant factor that influences green purchase intention [61]. Therefore, building a green brand image known as a whole range of impressions, conceptions, and apprehensions towards a brand in the customers’ memory, which is correlated to the sustainability and eco-friendly concerns [59] must be a goal for all companies.

Knowledge is a powerful instrument of change [14]; brands can drive behavior toward sustainable consumption [62] if companies use their brands to promote their sustainability messages and values to their customers and stakeholders [63]. According to this assumption, we can assert that consumers will choose companies that have integrated sustainability into their businesses by increasing their

connection with company or companies' products that will help companies to increase customer brand loyalty [64]. The current study examined whether there is a relationship between attitudes towards sustainable development (environmental viewpoint) and brand loyalty.

## 2.2. Attitudes toward Sustainable Development

The OECD Report Promoting Sustainable Consumption: Good Practices in OECD Countries stipulates that consumers have a significant role in sustainable development [65]. Young et al. [55] reached the same conclusion and stipulated that each consumer decision can contribute to a sustainable pattern of consumption but results of different studies conducted in this direction revealed that it is difficult to change people's consumption patterns [66]. Knowledge factors that influence people's consumption patterns have critical importance in developing strategies for achieving the sustainable development goals. Understanding consumer sustainable behavior is essential to contribute to the success of sustainable development. We need to specify that many studies refer to green behavior rather than sustainable behavior. Seen as a pro-environmental behavior, green behavior is defined by Science for Environment Policy as behavior that minimizes harm to the environment as much as possible, or even benefits it [67]. Starting from this definition, we consider that studies about green behavior help us to understand better sustainable behavior and, in this context, it is very important to understand how different factors such as attitude, concerns, knowledge, and intention influence green behavior to be able to influence it. From all these factors, consumer's attitudes play a vital role in influencing a person's behavior [67]. Tsen et al. [68] even suggested that attitudes are the most consistent factor predicting people's willingness to pay more for green products.

It is important to note there are many factors that influence consumer attitudes including education and knowledge [66,69], and age [70,71]. Our research will focus on the link between attitudes and gender as a variable in two countries with somewhat different levels of development, the United States of America (USA) and Romania. Although our research did not focus on age as a variable that influences consumer's attitude, we introduce some aspects related to link between age and consumer attitudes since our research participants are college students. Young people are often expected to be more concerned about sustainability issues since they are more informed, more vocal and proactive, and involved in different environmental projects, thus it is easier to make sustainable choices. Tuncer et al. [70] and Wee et al. [71] suggested that youth are very interested in sustainability issues and are disposed to adopt a sustainable lifestyle. Other studies pointed out an opposite fact: older population could be more concern about environmental issues compared to a younger population [72,73]. Referring to the study conducted by Shen and Saijo [72], we need to consider its limitations, based on the fact that study area was limited to Shanghai, China. It is also important to understand a much more Liberal mindset is often promoted to college students in countries such as the USA, which has a highly Liberal education system. As a result, college students may be biased towards sustainability while young people with no college education will arguably be less compelled to accept sustainability rhetoric. An interesting finding refers to the fact that schools influence different attitudes of children related to their parents [74]. Results of Eilam and Trop study indicated that school is successful in influencing children attitudes, but this institution does not have the same success in influencing parents' attitudes [74]. However, one study suggested that age does not influence attitudes towards sustainability [66].

Referring to another variable that can influence consumer's attitude, gender, we can state that the relationship between gender and attitude toward sustainability has been studied intensely in recent years. Some researchers suggested [75–79] that women demonstrates more pro-environmental attitudes than men and express more interest in sustainable development [80–82]. Different results are reported by Isenhour and Ardenfors [83] who found women are much more focused on sustainable consumption and express more interest in sustainable living. The same findings were indicated by Ahmad and Juhdi, Rezai et al. [84,85] and Stevens [81], suggesting that female participation in the decision-making process can help societies to move faster toward sustainability. Contrary to

these research findings, Watling and Zhou [66], Dalen and Halvorsen [86], and Chen and Chai [87] suggested there are no significant differences between gender in their environmental attitudes and attitudes towards green products. The present study will continue to explore gender differences in sustainability attitudes.

Consumers might express a positive attitude towards environmental issues [88,89], but do they act according to this attitude? Sustainability requires people not only to have a positive attitude towards this issue but also to act on it. The United Nations Educational, Scientific and Cultural Organization (UNESCO) emphasizes that, to achieve the sustainable development goals, people need to change fundamentally their attitudes and behavior [90]. Inconsistency between consumers' positive attitudes and their actual sustainable consumption is called attitude–behavior gap, a concept addressed in the next section.

### 2.2.1. Attitude–Behavior Gap

The relationship between attitude and behavior has been previously examined and contradictory results were noticed. Evidence showed this association ranging from positive to negative to neutral [91–98]. If early research on relationship between attitudes and behavior outlines that attitude can help us to predict people's behavior [91], recent studies found inconsistency between what people say they will do and what they actually do, known as attitude–behavior gap [92–98]. Researchers including Kraus [99] and Ajsen [100] considered that attitudes alone are insufficient predictors of behavior. The fact that consumers present a positive attitude towards sustainable products does not necessarily indicate they will display consistent purchase behavior. These results are consistent with those reported by Lakatos et al. [101] related to Romanian consumers' attitude towards eco-friendly consumption and environmental protection. Findings of this study suggested that, even though Romanian consumers express positive attitudes related to environmental protection and sustainable consumption issues, their sustainable consumption behavior is not very consistent with pro-environmental attitudes expressed by them.

To explain the consumer attitude–behavior gap, many theories were developed including Ajzen and Fishbein's Theory of Reasoned Action (TRA) [102], Ajzen's Theory of Planned Behavior [103], and Stern's Value-Belief-Norm (VBN) Theory [104]. Chatzidakis et al. considered that attitude–behavior gap is the consequence of the fact that consumer behavior is constrained by different physical or psychological barriers that reduce the impact of attitudes [105]. Davies et al. argued that the gap is the consequence of social desirability bias impact of survey research [106]. If attitude does not always predict behavior [107], then what are the factors that can influence it? As economists have become more interested in studying consumer behavior, psychology has extended their group of interest [108] to find factors that influence human behavior. Based on different behavioral models and theory, Darnton [109] asserted that human behavior is very complex and arises from diverse psychological factors, and from social, societal, and contextual influences. Taking a step forward towards sustainability issue, what are factors that can determine a responsible environmental behavior? Based on a meta-analysis, Hines et al. [98] identified the variables associated with responsible environmental behavior including knowledge of issues, knowledge of action strategies, locus of control, attitudes, verbal commitment, and an individual's sense of responsibility. Kollmuss and Agyeman [110] considered that pro-environmental behavior is influenced by internal factors (knowledge, emotional involvement values, and attitudes) and external factors (social, cultural, political factors, economic situation, and infrastructure). People may need to be encouraged to rethink and change their routine behavior [111], but this is very often hard to change [112] because it is affected by various factors that are very difficult to be controlled by marketers. Researchers have found other factors of major importance in predicting pro-environmental behavior. For example, Mayer and Frantz [113] considered that connection to nature is an important predictor of ecological behavior and propose the Connectedness to Nature Scale (CNS) to measure the relationship between individuals and nature. Bada and Sasse [114]

argued that behavior can be changed based on changes in attitudes and intentions, although, as the next sections address, there are still gaps that prevent change in behavior.

### 2.2.2. Intention–Behavior Gap

Existing literature suggests that purchase intention can be used for predicting customer purchase behavior based on a positive relationship founded between them [102,103,115,116]. Analyzing the relation between attitude and intention of buying organic food, Tarkiainen and Sundqvist [117] outlined that there is a significant positive relation. Ferraz et al. also found a direct and positive relationship between intention and behavior and consider that factors such as price, availability, and perceived quality affect essentially the relation [118]. Several other studies indicated an opposite conclusion. Important differences were found between ethical consumption considered to not harm the environment and society [119], intentions, and adopted purchase behavior [120–122]. In this context, ethical consumption is considered a type of consumption that does no harm to the environment and society [119]. Sheeran and Webb [116] showed that intentions shape our actions approximately half of the time, which demonstrates that the intention–behavior gap is large, and that factors such as intention quality, intention properties, basis of intention, and nature of the focal goal inhibit or enable the realization of intentions [116].

### 2.2.3. Knowledge–Behavior Gap

Considered to be the amount of knowledge that a person has acquired related to environmental issues [123], environmental knowledge addresses how people may be more concerned about environmental and climate change problems [124]. Studies showed knowledge to be one of the most important factors that affect human behavior. Hassan and Nor, analyzing consumer decision making towards green electronic based on four independent variables (attitude, knowledge, intention, and concerns), found that environment knowledge and purchase intention are the most important variables that affect consumers' decision in the process of choosing green electronic products [125]. Vicente-Molina et al. found that knowledge influences pro-environmental behavior while attitude is not a relevant variable [126]. Other researchers suggested that, although a positive relationship exists between people's environmental knowledge and their pro-environmentally behavior, the link between them is only moderate, emphasizing the gap between knowledge and behavior [127]. Contrary to these findings, other researchers noted that we cannot attribute a direct relationship between these two factors [110,128].

We can consider that, between level of knowledge and pro-environmental behavior, there is a direct relation, but studies conducted in this direction have different results. Some studies indicated that a high level of environmental knowledge increases pro-environmental behavior [98,129], while other studies pointed out that a high level of knowledge does not determine a pro-environmental behavior [126,130]. Thus, there are more internal factors besides attitude such as knowledge and intention that can work together to impact pro-environmental behavior.

## 2.3. *Developed Countries versus Underdeveloped and Developing Countries*

Human motivation plays a significant role in the decisions people make, but, according to Maslow's hierarchy of needs, people will first satisfy their biological and physiological needs, and after that they will move to another level. For example, people from underdeveloped and developing countries will try to satisfy their basic survival needs [131], and all other problems will become important for them only after basic needs are satisfied. Under such conditions, it is obvious that people and authorities from these countries will perceive basic social and economic challenges (e.g., water supply, housing) as being more important than environmental issues. Unequal distributions of social and economic systems will affect sustainable decisions; therefore, significant attention may be commonly given to ecological problems in the developed world, while developing countries need to prioritize social and economic dimensions to survive. UNESCO Reports Sustainable Development in

the Least Developed Countries—Towards 2030 [132] emphasizes that improving quality education and skills development; major investments in science, technology, and innovation (STI); and access to communication and information are essential in achieving sustainable development in least developed countries (LDCs). Kelly [133] argued that developed countries need to adopt a “carrot and stick” system to convince developing countries to achieve sustainable development, which suggests that an incentive system needs to be implemented to obtain positive effects.

Each developing country has its own point of view related to sustainable development issues. While developed countries see sustainable development issues as a way of environmental protection, developing countries see it as a tool used to solve problems associated with poverty [134]. Reardon and Vosti [135] stipulated that relation between environment and poverty is influenced by many factors including poverty distribution, level of poverty, type of poverty, type of environmental problems, income level, investment, and land use. Schultz indicated that people are concerned about environmental issues in all countries, including developed and developing nations [136]. Takayama et al., in a more recent study focused on Russia and Japan, found a positive attitude toward environmental issues in both countries and additionally Russian people were relatively more concerned [137]. These results are similar to those indicated by additional research carried out by Dunlap et al. [138,139] that considered 24 countries around the world at different levels of development. Our study examines the relationship between brand loyalty and consumers’ environmental viewpoint in two countries with different development levels: USA, a developed country, and Romania, considered a developing country according to International Statistical Institute [140].

### 3. Methods and Measures

#### 3.1. Participants

College students from the USA and Romania were recruited using a convenience sampling method over a period of several weeks. The researchers sought participants from academic institutions they were familiar with and could obtain permission to recruit students to participate. One of the researchers lives in the upper Midwest region of the USA, and another researcher lives in Romania. This allowed us to investigate two different countries with the goal of greater external validity. Our research was conducted on master’s students in Romania; the questionnaire was applied to master’s students of the Business Faculty from Cluj Napoca, English program. The population of the study consists of 70 master’s students, first and second year of study. We had a 69% response rate. Two reasons determined us to use this particular category of students: first, master’s students from this program follow courses in English language so they better understand questionnaire use, to obtain pertinent responses; and, second, students get information about branding only in the first semester of the master’s program and we considered that will better help students to understand concepts addressed in questionnaire. From the USA, the population consisted of 118 students from the University of Akron and Stark State College undergraduate programs. We had a 37% response rate. These students major in Organizational Supervision or Psychology, working forward to their bachelor degrees.

Students were invited to participate during class; volunteers received an email with a survey link. They had an opportunity to voluntarily participate in the research and did not receive extra credit or compensation for their participation. The survey was administered online, and approximately 130 students initially accessed the survey to complete it, and 92 participants completed the entire survey (62 females and 30 males), representing a 49% response rate. Demographic information (gender and location) was also collected at the beginning of the survey (Table 1).

**Table 1.** Characteristics of survey participants ( $n = 92$ ).

Characteristics	$n$ (%)
Gender	
Female	62 (67.4)
Male	30 (32.6)
Age	
18–24	57 (61.95)
25–34	26 (28.26)
35–44	8 (8.7)
45–54	1 (1.09)
Country	
Romania	48 (52.2)
USA	44 (47.8)

### 3.2. Measures

To assess attitudes toward sustainability, the New Ecological Paradigm (NEP) scale, designed by Dunlap, Van Laire, and Jones [141], was used. The NEP is considered to be a valid instrument and a reliable measure of pro-environmental orientations and was found to be highly appropriate for the present study. NEP scale consists of 15 items, questions related to attitudes towards humans ruling the planet, the limits of resources, and ecological crisis. Low scores on the NEP test indicate low interest in sustainability; high scores on the NEP scale indicate high levels of interest in sustainability. Dimensions of the NEP scale include: the reality of limits to growth (1, 6, and 11); anti-anthropocentrism (2, 7, and 12); the fragility of nature's balance (3, 8, and 13); rejection of exemptionalism (4, 9, and 14); and the possibility of an ecocrisis (5, 10, and 15).

To access brand loyalty levels, the Brand Loyalty Scale [35] was utilized for both the pre-test and the post-test. Participants were told the measure was a “Company Survey”, to avoid indicating the scale measured brand loyalty, which could have potentially negatively impacted internal reliability. Eight questions addressed brand loyalty using a 7-point Likert Scale ranging from strongly disagree to strongly agree. The assessment measured levels of items commonly associated with brand loyalty (e.g., “If someone makes a negative comment about this brand, I would defend it”). The scale demonstrated to be a highly reliable measure with a Cronbach coefficient alpha level of 0.90 for Brand Loyalty in the Lau and Lee study [35]. Measures of validity were also acceptable.

For our research, we considered it appropriate to use a 7-point Likert scale since this scale measure the “intensity” of an opinion. Likert developed the scale in 1932 to measure human attitudes [142,143] and it is used by respondents to rate the degree to which respondents agree or disagree with a statement. Lau and Lee [35] established reliability and validity of the Brand Loyalty survey using a standardized 7-point Likert scale.

The pre/post-test research design was as follows: First, participants were instructed to “think about a well-known manufacturer and distributor of cell phones, computers, and other types of electronics”. This message was followed by a brief company description and, although the organization was fictitious, the description was designed to be somewhat deceptive by making it appear the company was real. The intent was to increase internal validity by simulating a realistic scenario (see Appendix A).

Next, the participants answered questions about their brand loyalty levels (pre-test; SCORE1). After completing questions about their “Environmental Concerns” (NEP scores), participants were exposed to the organization's sustainable development practices during a hypothetical “Expansion Announcement” and the Brand Loyalty Scale was then administered a second time (posttest; SCORE3). The research design was constructed in a manner that would let the researchers evaluate the immediate emotional impact on brand loyalty, following a company announcement regarding the organization's apparent environmental concerns. In a world of spontaneous, emotion driven responses

often generated in social media, a company's communication-related decisions can have an almost immediate and often damaging impact. This is common in society, as we observe in the news on almost a daily basis business leaders, politicians, and other public figures who are forced to backpedal their remarks. This study focuses on one specific area (i.e., sustainability) that often leads to emotion-based, social arguments: for example, a more conservative individual may see sustainability as an excuse for more government control and harmful to small businesses, a more liberal minded individual may see sustainability as a critical approach used to protect the environment for future generations. If an organization wants to obtain the business of both perspectives, publicly announcing sustainable plans must be carefully thought through.

#### 4. Results

Results indicate there was a slight increase (+0.14) in brand loyalty between pretest (4.72) and posttest (4.86) scores (Table A1, Appendix B). However, a paired samples *t*-test (Table A2, Appendix B) did not show any statistically significant difference between brand loyalty pretest and brand loyalty posttest values ( $p = 0.117$ ). These results may indicate the potential value of announcing expansion plans that include plans for sustainable business practices. The lack of a decrease to brand loyalty may be a positive sign to organizations with pro-ecological worldviews.

An analysis of sustainability attitude scores and pretest brand loyalty scores revealed a statistically significant relationship ( $p = 0.000$ ), with a moderate correlation (0.273). With the equation line  $y = 0.379 + 3.357x$ , there was less of an impact of sustainability attitude between brand loyalty pretest scores compared to posttest scores. A correlational analysis regarding the relationship between sustainability attitude scores and pretest brand loyalty scores revealed a statistically significant ( $p = 0.043$ ) outcome with a weak Pearson's coefficient of linear correlation of 0.211. Additional regression analysis also confirmed these results (Figure 1).

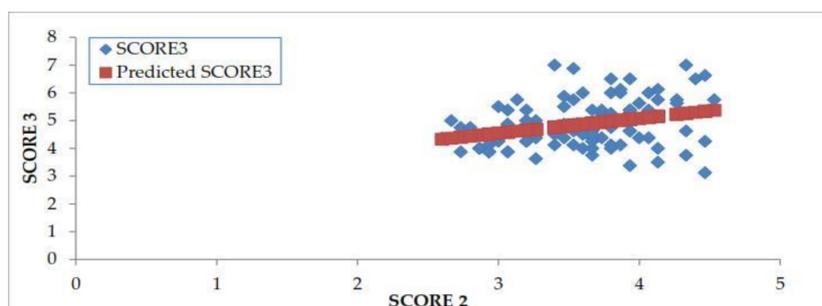
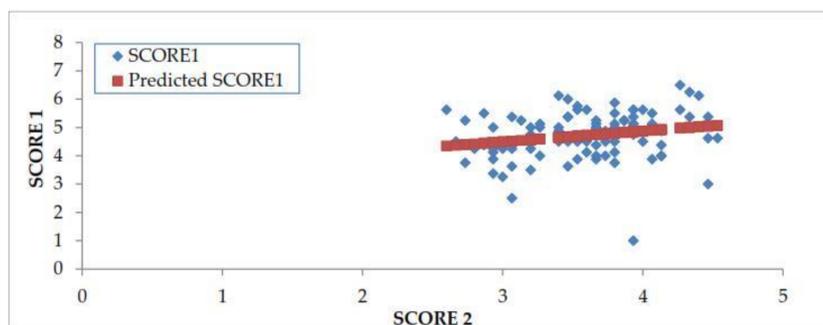


Figure 1. Regression between sustainability attitude scores and posttest brand loyalty scores.

Correlational analysis regarding the relationship between sustainability attitude scores and posttest brand loyalty scores revealed a statistically significant outcome ( $p = 0.000$ ), with a moderately strong Pearson's coefficient of linear correlation of 0.485 (Figure 2).

Figure 2 regression graph shows how sustainability attitude scores impact the Brand Loyalty scores post-test;  $Y = 0.548 + 2.93X$ . Furthermore, regression analysis indicated a significant  $p$  value ( $p = 0.00$ ), therefore, the result is significant. There was a weak (slope of 0.548) but statistically significant effect of sustainability attitude score on posttest brand loyalty score. The authors investigated whether there is a difference in NEP scores by regions; participants from Romania ( $N = 48$ ) and from the United States of America ( $N = 44$ ). Independent Samples Test (Table A3, Appendix B) revealed there was no significant difference in Sustainability attitude score by regions. Further analyzing demographic data, the authors examined whether there was a difference in NEP scores by gender, females ( $N = 62$ ) and males ( $N = 30$ ). Independent Samples Test (Table A4, Appendix B) indicated no significant difference in Sustainability attitude scores by gender. In addition, authors investigated whether there is a difference in NEP scores by age, 18–24 age group ( $N = 57$ ), 25–34 age group ( $N = 26$ ), 35–44 age group ( $N = 8$ ), and 45–54 age group ( $N = 1$ ). Independent Samples Test (Table A5, Appendix B) revealed there was no

significant difference in Sustainability attitude score. The authors also investigated whether there was a difference in Brand Loyalty pretest and posttest scores gender and region. Independent Samples Test (Tables A6–A11, Appendix B) revealed there was no significant difference in Brand Loyalty scores regarding gender and region.



**Figure 2.** Regression between sustainability attitude score and pretest brand loyalty. Source: Chart made by the authors.

## 5. Discussion

As previously indicated, our study aimed to answer the following two research questions:

1. To what extent will brand loyalty be impacted once consumers are exposed to an organization's sustainable development plan?
2. How do factors such as gender, age and region influence consumers' attitude toward sustainability and impact brand loyalty once they are exposed to an organization's sustainable development plan?

To answer to these research questions, we conducted an online survey using participants from two countries with different level of development. Related to first question, results indicate that there is a strong, positive correlation between attitudes towards sustainability and brand loyalty. Participants, who scored high on the NEP questionnaire (attitudes toward sustainability) also scored high on the posttest brand loyalty scale, indicating that they will be loyal to a brand after the organization has gone green. This finding is consistent with the findings of Grubor and Milonavov [14] regarding brand loyalty of consumers and environmental awareness of a company.

With regard to second question we have some interesting findings. One of the most interesting findings of this research is that there were no significant differences in attitudes toward sustainability (NEP scores) by region. Even though there was previous research [131,134] that found a major difference in attitudes toward sustainability and environmental issues in developing versus developed countries, our present study did not find significant differences in attitudes toward sustainability in participants from Romania versus the USA. This result is consistent with findings from other previous empirical studies [136–139]. In addition, based on a study conducted in Romania, Pintea et al. [144] suggested that, to gain medium and long term benefits, Romanian companies need to include environmental aspects in their future strategies.

Another interesting finding of this research is that there were no significant differences in gender attitudes toward sustainability. Previous research by McStay and Dunlap [145] and Mohai [146] revealed that females are more likely than men to express their concern for environmental quality through everyday decisions than males. Another study indicated that males are slightly more concerned about environmental issues than females [147]. However, the present study did not detect any differences in gender regarding concerns about the environment and attitudes toward sustainability. These findings are consistent with those obtained by Watling and Zhou [66], Chen and Chai [87], and Dalen and Halvorsen (except transportation sector where differences were noticed) [86].

Studies reveal that age differences influence green behaviors. Pillemer et al. [148] concluded that older populations have problems in changing their habits. This constitutes a barrier to pro-environmental attitudes and behavior. Wiernik et al. [73] suggested that younger populations manifest higher pro-environmental concerns. Shen and Saijo [72] considered that older populations manifest more environmental concern than younger populations. Our study indicates that there were no significant differences in age regarding attitudes toward sustainability, but this can be the result of the fact that most of respondents (83 from the total of 92, representing 90% from our sample) belong to 18–24 age group ( $N = 57$ ) and 25–34 age group ( $N = 26$ ). Referring to organic food consumption of Romanian consumers, findings of a study conducted in Romania by Oroian et al. [149] indicated there are no major significant differences among organic food consumers regarding age and gender. The results of our study also indicate no significant difference in Brand Loyalty scores regarding gender and region.

This research has some limitations, which have to be pointed out and could be addressed in future research. First, our research results must be used with caution since we used in our study a very specific group of people, college students from USA and Romania; therefore, the results are not generalizable to the entire population. Even though diversity of participants is important for many studies, we decided on this specific group for two reasons: first, easy access to college students as the authors are faculty and have access to the population, and using survey results for a new curriculum with an emphasis on sustainability as a priority for study can now be developed, implemented, and taught in the future; and, second, the population investigated is relatively small ( $N = 92$ ). Even more college students from two different faculties were asked to complete the survey; unfortunately, we had a small number of participants (49% response rate).

Thirdly, in our paper, we focused mainly on the environmental dimension of sustainable development. In addition, based on EPA's perspective, we consider green products and services those products and services that cause "less harm to human health or the environment compared to other products that serve the same purpose" and we consider this term synonymous with "environmentally sustainable" [150].

Other limitation includes potential validity issues of the NEP questionnaire that was used to measure attitudes toward sustainability [141]. Some of the questions of the scale, such as "Plants and animals have as much right as humans to exist" and "The earth is like a spaceship with very limited room and resources", could be considered biased. These types of questions could have influenced the survey takers to score higher on the NEP scale.

## 6. Conclusions

Many people believe we are faced with major environmental problems that require urgent measures to be adopted. Sustainability is considered to be the key that can help us reduce and eliminate environmental problems. In this context, countries need to develop national strategies for sustainable development; companies need to adopt responsible decisions and to introduce in their corporate practices environmental actions; and consumers need to contribute significantly to environmental improvement by adopting positive attitudes and behaviors towards sustainable issues. Previous studies have focused particularly on studying consumer attitudes towards sustainability, but our study goes further by investigating correlations between attitudes towards sustainability and brand loyalty.

A positive correlation between high levels of environmental concern and brand loyalty were noticed, which signifies that people who tend to have higher concerns about environmental issues will be loyal to a brand after the company decides to go green. Taking into account our findings and limitations of the study, this paper provides a direction for managers to develop new strategies that can meet actual and future challenges related to environmental issues. We have indicated that a company that invests in green activities can increase brand loyalty and generate competitive advantages. In the short term, business costs may increase, but, in the long term, these investments could result in increased profits. This must be considered as an opportunity to transform businesses, to increase market share, and increase revenues and long-term profitability. The fact that there is no significant

difference in sustainability attitude scores by gender, age, and region helps marketers to develop the same sustainable strategies' campaigns for both women and men, and also for developed and developing countries.

Since our study has some limitations, more research needs to be conducted to help managers in their activities. This study can serve as a baseline for future studies including: (1) a cross section analyses of the Romanian and USA population can be made, since our study sample included only a specific sample (college students); and (2) analyzing how variables such as price, product availability, product type, level of education and individual personality (among other variables) influence consumers brand loyalty once they are exposed to a company's sustainable development. The same countries can be used to have a more complex image about this issue.

Environmental education is considered to have a major role in facilitating sustainable principles, values, and practices in peoples' lives [151]. Since our study indicated that people who tend to have higher concerns about environmental issues will be loyal to a brand after the company decides to go green, education can be the key for promoting environmental sustainability to students [152]; therefore, a new academic curriculum focused on sustainability issues must be developed in universities, and studies like this can facilitate a new approach to existing curricula. Actual students will be future employees and managers, entrepreneurs, and based on their knowledge about sustainability issues they will be able to help protect the planet. In depth knowledge about sustainability will help future marketers to develop adequate strategies for companies' sustainable development, employees to adopt sustainable principles in their work, and entrepreneurs to develop new sustainable products and services.

**Author Contributions:** All authors have contributed significantly for this research in all phases and sections.

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

## Appendix A

Appendix A contains the questionnaire material used in our study.

### Organization Description

Please read the following organization description of what we will refer to as Company X. You will then be asked questions about this company:

Although we cannot state the organization's name, think about a well-known manufacturer and distributor of cell phones, computers, and other types of electronics. We will call this organization "Company X". The organization has locations around the world, including factories in North and South America, Asia, and Europe. This company has growth consistent with other organizations in a similar industry and of an equivalent size. Like their competition, this company is considering an expansion including additional manufacturing facilities and distribution centers.

### Company Survey

Please respond to the following questions about the company previously described:

1. I do not intend to keep buying this brand.
2. If another brand is having a sale, I will generally buy the other brand instead of this one.
3. If this brand is not available in the store when I need it, I will buy it another time.
4. If this brand is not available in the store when I need it, I will buy it somewhere else.
5. If someone makes a negative comment about this brand, I would defend it.
6. I would not recommend this brand to someone who cannot decide which brand to buy in this product class.

7. I would believe a person if that person made a negative comment about this brand.
8. I often tell my friends how good this brand is.

### **Environmental Concerns**

Please respond to the following questions about your personal views about environmental concerns:

1. We are approaching the limit of the number of people the earth can support.
2. Humans have the right to modify the natural environment to suit their needs.
3. When humans interfere with nature it often produces disastrous consequences.
4. Human ingenuity will insure that we do NOT make the earth unlivable.
5. Humans are severely abusing the environment.
6. The earth has plenty of natural resources if we just learn how to develop them.
7. Plants and animals have as much right as humans to exist.
8. The balance of nature is strong enough to cope with the impacts of modern industrial nations.
9. Despite our special abilities humans are still subject to the laws of nature.
10. The so-called "ecological crisis" facing humankind has been greatly exaggerated.
11. The earth is like a spaceship with very limited room and resources.
12. Humans were meant to rule over the rest of nature.
13. The balance of nature is very delicate and easily upset.
14. Humans will eventually learn enough about how nature works to be able to control it.
15. If things continue on their present course, we will soon experience a major ecological catastrophe.

### **Expansion Announcement**

Please read the following recently released announcement from the company previously discussed, Company X:

Company X is pleased to announce their most recent innovation. Because of the nature of this complex device and the technology needed to manufacture it, multiple new facilities must be constructed. Despite the significant revenue and jobs the company can generate once the expansion is complete, Company X will consider sustainability during every stage of the expansion process. For example, manufacturing locations will be chosen for environmental protection reasons over logistical concerns. The result will be a significantly slower pace of construction, lower wages for employees, and higher product costs due to extra resources dedicated to environmental concerns. However, Company X believes their decisions are critical to help honor their commitment to sustainability.

### **Company Survey**

Based on what you now know about Company X, please respond to the following questions about the company's expansion plans:

1. I do not intend to keep buying this brand.
2. If another brand is having a sale, I will generally buy the other brand instead of this one.
3. If this brand is not available in the store when I need it, I will buy it another time.
4. If this brand is not available in the store when I need it, I will buy it somewhere else.
5. If someone makes a negative comment about this brand, I would defend it.
6. I would not recommend this brand to someone who cannot decide which brand to buy in this product class.
7. I would believe a person if that person made a negative comment about this brand.
8. I often tell my friends how good this brand is.

NOTE: Company Survey items 1, 2, 6, and 7 were reverse scored.

## Appendix B

Appendix B contains Tables A1–A11.

**Table A1.** Paired Samples Statistics. Paired Samples *t*-Test. Pretest and Posttest scores.

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	SCORE1	4.72	93	0.850	0.088
	SCORE3	4.86	93	0.879	0.091

**Table A2.** Paired Samples *t*-Test. Pretest and Posttest Scores.

		Paired Differences					t	df	Sig. (2-Tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	SCORE1 SCORE3	−0.144	0.878	0.091	−0.324	0.036	−1.581	92	0.117

**Table A3.** Independent Samples Test: NEP score differences by region.

		Levene's Test for Equality of Variances		<i>t</i> -Test for Equality of Means						
		F	Sig.	t	df	Sig. (2-Tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
SCORE2	Equal variances assumed	0.012	0.912	−0.744	88	0.459	−0.073	0.099	−0.271	0.123
	Equal variances not assumed			−0.740	83	0.462	−0.073	0.099	−0.272	0.124

**Table A4.** Independent Samples Test: NEP score differences by gender.

		Levene's Test for Equality of Variances		t-Test for Equality of Means							
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
										Lower	Upper
SCORE2	Equal variances assumed	1.091	0.299	1.062	90	0.291	0.112	0.105	-0.097	0.322	
	Equal variances not assumed			1.123	66	0.265	0.112	0.099	-0.087	0.311	

**Table A5.** Independent Samples Test: NEP score differences by age.

		Sum of Squares	df	Mean Square	F	Sig.
SCORE3	Between Groups	1.650	3	0.550	0.696	0.557
	Within Groups	69.557	88	0.790		
	Total	71.208	91			
SCORE1	Between Groups	2.622	3	0.874	1.202	0.314
	Within Groups	63.983	88	0.727		
	Total	66.605	91			
SCORE2	Between Groups	1.212	3	0.404	1.836	0.146
	Within Groups	19.355	88	0.220		
	Total	20.567	91			

**Table A6.** Independent Samples Test, pretest differences in Brand Loyalty by regions.

		Levene's Test for Equality of Variances		t-Test for Equality of Means							
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
										Lower	Upper
SCORE1	Equal variances assumed	0.639	0.426	-0.800	88	0.426	-0.145	0.182	-0.507	0.216	
	Equal variances not assumed			-0.783	75	0.436	-0.145	0.185	-0.515	0.224	

**Table A7.** Independent Samples Test, posttest differences in Brand Loyalty by regions.

		Levene's Test for Equality of Variances		t-Test for Equality of Means							
		F	Sig.	t	df	Sig. (2-Tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
										Lower	Upper
SCORE3	Equal variances assumed	0.191	0.664	0.400	88	0.690	0.075	0.189	-0.300	0.452	
	Equal variances not assumed			0.397	82	0.692	0.075	0.190	-0.303	0.455	

**Table A8.** Independent Samples Test, pretest differences in Brand Loyalty by gender.

		Levene's Test for Equality of Variances		t-Test for Equality of Means							
		F	Sig.	t	df	Sig. (2-Tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
										Lower	Upper
SCORE1	Equal variances assumed	0.081	0.776	-1.377	90	0.172	-0.26	0.189	-0.636	0.115	
	Equal variances not assumed			-1.416	61	0.162	-0.260	0.184	-0.628	0.107	

**Table A9.** Independent Samples Test, posttest differences in Brand Loyalty by gender.

		Levene's Test for Equality of Variances		t-Test for Equality of Means							
		F	Sig.	t	df	Sig. (2-Tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
										Lower	Upper
SCORE3	Equal variances assumed	1.794	0.184	-0.394	90	0.694	-0.077	0.197	-0.470	0.314	
	Equal variances not assumed			-0.422	68	0.675	-0.077	0.184	-0.446	0.290	

**Table A10.** Independent Samples Test, differences in Brand Loyalty pretest by region.

		Levene's Test for Equality of Variances		t-Test for Equality of Means							
		F	Sig.	t	df	Sig. (2-Tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
										Lower	Upper
SCORE1	Equal variances assumed	0.639	0.426	−0.800	88	0.426	−0.145	0.182	−0.507	0.216	
	Equal variances not assumed			−0.783	75	0.436	−0.145	0.185	−0.515	0.224	

**Table A11.** Independent Samples Test, differences in Brand Loyalty posttest by region.

		Levene's Test for Equality of Variances		t-Test for Equality of Means							
		F	Sig.	t	df	Sig. (2-Tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
										Lower	Upper
SCORE3	Equal variances assumed	0.191	0.664	0.400	88	0.690	0.075	0.189	−0.300	0.452	
	Equal variances not assumed			0.397	82	0.692	0.075	0.190	−0.303	0.455	

## References

- Burgess, J.C.; Barbier, E.B. Sustainable Development. In *International Encyclopedia of the Social & Behavioral Sciences*; Pergamon: Oxford, UK, 2001; pp. 15329–15335. [CrossRef]
- United Nations. World Summit on Sustainable Development: Johannesburg 2002. Political Declaration and Plan of Implementation. 2003. Available online: <http://www.un-documents.net/jburgdec.htm> (accessed on 12 September 2017).
- Battle, G. Sustainability for Consumer Business Companies. A Story of Growth. 2012. Available online: [https://www2.deloitte.com/content/dam/Deloitte/global/Documents/Consumer-Business/dttl\\_cb\\_Sustainability\\_Global%20CB%20POV.pdf](https://www2.deloitte.com/content/dam/Deloitte/global/Documents/Consumer-Business/dttl_cb_Sustainability_Global%20CB%20POV.pdf) (accessed on 12 September 2017).
- European Commission (E.C.). Sustainable Consumption and Production. 2009. Available online: [http://ec.europa.eu/environment/pubs/pdf/factsheets/sustainable\\_consumption.pdf](http://ec.europa.eu/environment/pubs/pdf/factsheets/sustainable_consumption.pdf) (accessed on 22 February 2018).
- D'Amato, A.; Henderson, S.; Florence, S. *Corporate Social Responsibility and Sustainable Business*; Center for Creative Leadership: Greensboro, NC, USA, 2009.
- Strömberg, A. CSR in Sustainable Economic, Environmental and Social Aspects. Developing Sustainability in Companies That Are Using Toxic Chemicals. Thesis Centria University of Applied Sciences. 2016. Available online: [https://www.theseus.fi/bitstream/handle/10024/122202/Annika%20stromberg\\_thesis.pdf?sequence=1&isAllowed=y](https://www.theseus.fi/bitstream/handle/10024/122202/Annika%20stromberg_thesis.pdf?sequence=1&isAllowed=y) (accessed on 20 March 2018).
- Leiserowitz, A.A.; Kates, R.W.; Thomas, M.; Parris, T.M. Do Global Attitudes and Behaviors Support Sustainable Development? *Environment* **2005**, *47*, 22–38.
- Terlau, W.; Hirsch, D. Sustainable Consumption and the Attitude Behavior Gap Phenomenon—Causes and Measurements towards a Sustainable Development. *Int. J. Food Syst. Dyn.* **2015**, *6*, 159–174.
- Kaufmann, H.R.; Panni, M.F.A.K.; Orphanidou, Y. Factors affecting consumers' green purchasing behaviour: An integrated conceptual framework. *Amfiteatru Econ.* **2012**, *15*, 50–69.
- Sarigollu, E. A Cross-Country Exploration of Environmental Attitudes. *Environ. Behav.* **2009**, *41*, 365–386. [CrossRef]
- Department of Environment Food and Rural Affairs (DEFRA). *Achieving a Better Quality of Life: Review of Progress Towards Sustainable Development*; DEFRA: London, UK, 2002.
- Beckford, C.L.; Jacobs, C.; Williams, N.; Nahdee, R. Aboriginal environmental wisdom, stewardship, and sustainability: Lessons from the Walpole Island First Nations, Ontario, Canada. *J. Environ. Educ.* **2010**, *41*, 239–248. [CrossRef]
- Lee, S. Consumers' Value, Environmental Consciousness, and Willingness to Pay more toward Green-Apparel Products. *J. Glob. Fashion Mark.* **2012**, *2*, 161–169. [CrossRef]
- Grubor, A.; Milovanov, O. Brand Strategies in the Era of Sustainability. *Interdiscip. Descrip. Complex Syst.* **2017**, *15*, 78–88. [CrossRef]
- Cherian, J.; Jacob, J. Green marketing: A study of consumers' attitude towards environment friendly products. *Asian Soc. Sci.* **2012**, *8*, 117–126. [CrossRef]
- Eggert, A.; Ulaga, W. Customer perceived value: A substitute for satisfaction in business markets. *J. Bus. Ind. Mark.* **2002**, *17*, 107–118. [CrossRef]
- Liao, C.; Palvia, P.; Chen, J.-L. Information technology adoption behavior life cycle: Toward a technology continuance theory (TCT). *Int. J. Inf. Manag.* **2009**, *29*, 309–320. [CrossRef]
- Taylor, S.; Baker, T. An assessment of the relationship between service quality and customer satisfaction in the formation of consumers' purchase intentions. *J. Retail.* **1994**, *70*, 163–178. [CrossRef]
- Neal, W.D. Satisfaction is nice, but value drives loyalty. *Mark. Res.* **1999**, *11*, 21–23.
- Agustin, C.; Singh, J. Curvilinear effects of consumer loyalty determinants in relational exchanges. *J. Mark. Res.* **2005**, *42*, 96–108. [CrossRef]
- Oliver, R.L. Whence customer loyalty? *J. Mark.* **1999**, *63*, 33–44. [CrossRef]
- Torres, A.; Tribó, J.A. Customer Satisfaction and Brand Equity. *J. Bus. Res.* **2011**, *64*, 1089–1096. [CrossRef]
- Lei, S.; Chu, L. The mediating role of consumer satisfaction in the relationship between brand equity and brand loyalty based on PLS-SEM Model. *Int. Bus. Res.* **2015**, *8*, 62–70. [CrossRef]
- Aaker, D.A. *Managing Brand Equity: Capitalizing on the Value of a Brand Name*; The Free Press: New York, NY, USA, 1991.

25. Susanty, A.; Kenny, E. The Relationship between Brand Equity, Customer Satisfaction, and Brand Loyalty on Coffee Shop: Study of Excelso and Starbucks. *Asean Mark. J.* **2015**, *7*, 14–27. [[CrossRef](#)]
26. Keller, K. Brand synthesis: The multidimensionality of brand knowledge. *J. Consum. Res.* **2003**, *29*, 595–600. [[CrossRef](#)]
27. Alkhawaldeh, A.M.; Salleh, S.M.; Halim, F.B. Brand equity and brand loyalty: Newperspective. *Int. Rev. Manag. Mark.* **2016**, *6*, 722–730.
28. Teas, R.K.; Agarwal, S. The Effects of Extrinsic Product Cues on Consumers' Perceptions of Quality, Sacrifice, and Value. *Acad. Mark. Sci. J.* **2000**, *28*, 278–290. [[CrossRef](#)]
29. Bloemer, J.; de Ruyter, K.; Wetzels, M. Linking perceived service quality and service loyalty: A multidimensional perspective. *Eur. J. Mark.* **1999**, *33*, 1082–1095. [[CrossRef](#)]
30. Yoo, B.; Donthu, N.; Lee, S. An examination of selected marketing mix elements and brand equity. *J. Acad. Mark. Sci.* **2000**, *28*, 195–211. [[CrossRef](#)]
31. Spreng, R.A.; Mackoy, R.D. An empirical examination of a model of perceived service quality and satisfaction. *J. Retail.* **1996**, *72*, 201–214. [[CrossRef](#)]
32. Corritore, C.L.; Kracher, B.; Wiedenbeck, S. On-line trust: Concepts, evolving themes, a model. *Int. J. Hum.-Comput. Stud.* **2003**, *58*, 737–758. [[CrossRef](#)]
33. Shim, S.I. Enhancing Brand Loyalty Through Brand Experience: Application of Online Flow Theory. Ph.D. Thesis, Auburn University, Auburn, AL, USA, 2012.
34. Bilgili, B.; Özkul, E. Brand Awareness, Brand Personality, Brand Loyalty and Consumer Satisfaction Relations in Brand Positioning Strategies (A Torku Brand Sample). *J. Glob. Strat. Manag.* **2015**, *9*, 89–106. [[CrossRef](#)]
35. Lau, G.T.; Lee, S.H. Consumers' trust in a brand and the link to brand loyalty. *J. Mark.-Focus. Manag.* **1999**, *4*, 341–370.
36. IPCC. *Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*; Core Writing Team, Pachauri, R.K., Meyer, L.A., Eds.; IPCC: Geneva, Switzerland, 2014; 151p.
37. House, C.; Jordan, N.L.; Butt, T.E.; Kwan, J.; Alam, A. Perception Versus Skepticism—An Environmental Communication Issue and Climate Change. In *Handbook of Sustainability Science and Research*; World Sustainability Series; Leal Filho, W., Ed.; Springer: Cham, Switzerland, 2018; pp. 893–901.
38. United States Environmental Protection Agency (EPA). Air Pollution: Current and Future Challenges. Available online: <https://www.epa.gov/clean-air-act-overview/air-pollution-current-and-future-challenges> (accessed on 28 December 2017).
39. World Bank. Reducing Pollution. 2017. Available online: <http://www.worldbank.org/en/topic/environment/brief/pollution> (accessed on 28 December 2017).
40. Wutich, A.; Brewis, A. Food, Water, and Scarcity: Toward a Broader Anthropology of Resource Insecurity. *Curr. Anthropol.* **2014**, *55*, 444–468. [[CrossRef](#)]
41. Mancosu, N.; Snyder, R.L.; Kyriakakis, G.; Spano, D.E.I. Water Scarcity and Future Challenges for Food Production. *Water* **2015**, *7*, 975–992. [[CrossRef](#)]
42. Ackerman, F. *Climate Change: The Cost of Inaction*; Tufts University: Medford, MA, USA, 2008.
43. Bain, P.G.; Milfont, T.L.; Kashima, Y.; Bilewicz, M.; Doron, G.; Garðarsdóttir, R.B.; Gouveia, V.V.; Guan, Y.; Johansson, L.-O.; Pasquali, C.; et al. Co-Benefits of Addressing Climate Change Can Motivate Action around the World. *Nat. Clim. Chang.* **2015**, *6*, 154–157. [[CrossRef](#)]
44. Pavlovskaja, E. Are we there yet? A legal assessment and review of the concept of sustainable development under international law. *J. Sustain. Dev. Law Policy* **2013**, *2*, 139–152.
45. Reyhani, M.N.; Eslamian, S.; Davari, A. Sustainable Agriculture: Building Social-Ecological Resilience. In *Handbook of Drought and Water Scarcity: Environmental Impacts and Analysis of Drought and Water Scarcity*; Eslamian, S., Eslamian, F.A., Eds.; CRC Press: New York, NY, USA, 2017.
46. World Commission on Environment and Development. *Our Common Future*; Oxford University Press: Oxford, UK, 1987. Available online: <http://www.un-documents.net/ocf-02.htm> (accessed on 12 September 2017).
47. United Nations. Declaration of the United Nations Conference on the Human Environment. 1972. Available online: <http://www.un-documents.net/unchedec.htm> (accessed on 12 September 2017).

48. IUCN/UNEP/WWF. Caring for the Earth: A Strategy for Sustainable Living, Gland, Switzerland. 1991, p. 10. Available online: <https://portals.iucn.org/library/efiles/documents/cfe-003.pdf> (accessed on 12 September 2017).
49. Daly, H.E. *Steady State Economics*, 2nd ed.; Island Press: Washington, DC, USA, 1991.
50. Saunders, R. CSR: How to Get an Ethical Advantage. 2006. Available online: <http://www.highbeam.com/doc/1G1-156029766.html> (accessed on 12 September 2017).
51. European Commission. Sustainable Consumption and Production and Sustainable Industrial Policy (SCP/SIP) Action Plan. 2008. Available online: <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52008DC0397> (accessed on 12 September 2017).
52. Kim, H.K.; Lee, T.J. Brand Equity of a Tourist Destination. *Sustainability* **2018**, *10*, 431. [CrossRef]
53. Eccles, R.G.; Miller Perkins, K.; Serafeim, G. How to become a sustainable company. *MIT Sloan Manag. Rev.* **2012**, *53*, 43–50.
54. Campher, H. *Creating a Sustainable Brand: A Guide to Growing the Sustainability Top Line*; Routledge: New York, NY, USA, 2017.
55. Young, W.; Hwang, K.; McDonald, S.; Oates, C.J. Sustainable consumption: Green consumer behavior when purchasing products. *Sustain. Dev.* **2010**, *18*, 21–31. [CrossRef]
56. Danciu, V. Successful Green Branding, a New Shift in Brand Strategy: Why and how it works. *Rom. Econ. J.* **2015**, *56*, 47–64.
57. Chang, N.; Fong, Ch. Green product quality, green corporate image, green customer satisfaction, and green customer loyalty. *Afr. J. Bus. Manag.* **2010**, *4*, 2836–2844.
58. Kong, W.; Harun, A.; Sulong, R.S.; Lily, J. The influence of customers' perception of green products on green purchase intention. *Int. J. Asian Soc. Sci.* **2014**, *4*, 924–939.
59. Chen, Y.S. The drivers of green brand equity: Green brand image, green satisfaction and green trust. *J. Bus. Ethics* **2010**, *93*, 307–319. [CrossRef]
60. Rizwan, M.; Usman, M.; Hammad, S.; Arham, T. An Empirical Study about Green Purchase Intentions. *J. Sociol. Res.* **2014**, *5*, 290–305.
61. Rahbar, E.; Wahid, N.A. Investigation of green marketing tools' effect on consumers' purchase behavior. *Bus. Strateg. Ser.* **2011**, *12*, 73–83. [CrossRef]
62. Elks, J. What Are the Most Effective Ways to Drive Changes in Consumer Behavior? 2013. Available online: [http://www.sustainablebrands.com/news\\_and\\_views/behavior\\_change/what-are-most-effective-ways-drive-changes-consumer-behavior](http://www.sustainablebrands.com/news_and_views/behavior_change/what-are-most-effective-ways-drive-changes-consumer-behavior) (accessed on 12 January 2018).
63. Kumar, V.; Christodouloupoulou, A. Sustainability and branding: An integrated perspective. *Ind. Mark. Manag.* **2014**, *43*, 6–15. [CrossRef]
64. Ginsberg, J.M.; Bloom, P.N. Choosing the Right Green Marketing Strategy. *MIT Sloan Manag. Rev.* **2004**, *46*, 79–84.
65. OECD. Promoting Sustainable Consumption-Good Practices in OECD Countries. 2008. Available online: <https://www.oecd.org/greengrowth/40317373.pdf> (accessed on 22 September 2017).
66. Watling, A.; Zhou, E. Attitudes Towards Sustainability: A quantitative Study of Sustainable Alidhem, 2011. Available online: <https://www.diva-portal.org/smash/get/diva2:430152/FULLTEXT01.pdf> (accessed on 22 September 2017).
67. Science for Environment Policy, Future Brief: Green Behavior. 2012. Available online: [http://ec.europa.eu/environment/integration/research/newsalert/pdf/FB4\\_en.pdf](http://ec.europa.eu/environment/integration/research/newsalert/pdf/FB4_en.pdf) (accessed on 22 September 2017).
68. Tsen, C.; Phang, G.; Hasan, H.; Buncha, M.R. Going green: A study of consumers' willingness to pay for green products in Kota Kinabalu. *Int. J. Bus. Soc.* **2006**, *7*, 40–54.
69. Joshi, Y.; Rahman, Z. Factors affecting green purchase behavior and future research directions. *Int. Strateg. Manag. Rev.* **2015**, *3*, 128–143. [CrossRef]
70. Tuncer, G.; Sungur, S.; Tekkaya, C.; Ertepinar, H. Young attitude on sustainable development: A case study. *H. U. J. Educ.* **2005**, *29*, 187–193.
71. Wee, M.I.; Ariffin, F.N.; Ng, T.F.; Shabudin, A.F.A. Awareness and Attitudes towards Sustainable Development amongst Higher Education Students in Penang, Malaysia. In *Handbook of Theory and Practice of Sustainable Development in Higher Education*; Leal Filho, W., Azeiteiro, U., Alves, F., Molthan-Hill, P., Eds.; World Sustainability Series; Springer: Cham, Switzerland, 2017. [CrossRef]

72. Shen, J.; Saijo, T. Reexamining the relations between socio-demographic characteristics and individual environmental concern: Evidence from Shanghai data. *J. Environ. Psychol.* **2008**, *28*, 42–50. [[CrossRef](#)]
73. Wiernik, B.M.; Ones, D.S.; Dilchert, S. Age and environmental sustainability: A meta-analysis. *J. Manag. Psychol.* **2013**, *28*, 826–885. [[CrossRef](#)]
74. Eilam, E.; Trop, T. Environmental attitudes and environmental behavior-Which is the horse and which is the cart? *Sustainability* **2012**, *4*, 2210–2246. [[CrossRef](#)]
75. Zelezny, L.C.; Chua, P.-P.; Aldrich, C. Elaborating on gender differences in environmentalism. *J. Soc. Issues* **2000**, *56*, 443–457. [[CrossRef](#)]
76. Uitto, A.; Juuti, K.; Lavonen, J.; Meisalo, V. Who is responsible for sustainable development? Attitudes to environmental challenges: A survey of Finnish 9th grade comprehensive school students. In *Current Research on Mathematics and Science Education; Proceedings of the XXI annual symposium of the Finnish Association of Mathematics and Science Education Research*; Research Report 253; Laine, A., Lavonen, J., Meisalo, V., Eds.; Department of Applied Sciences of Education, University of Helsinki: Helsinki, Finland, 2004; pp. 80–102.
77. Ofei-Manu, P. Gender and environment in the Japanese workplace. *Int. J. Innov. Sustain. Dev.* **2009**, *4*, 150–164. [[CrossRef](#)]
78. Takayama, N.; Petrova, E.G.; Matsushima, H.; Furuya, K.; Ueda, H.; Mironov, Y.V.; Petrova, A.; Aoki, Y. Values, Concerns, and Attitudes Toward the Environment in Japan and Russia: Examination of the Differences and Causes. *Urban Reg. Plan. Rev.* **2015**, *2*, 43–67. [[CrossRef](#)]
79. Fermani, A.; Crespi, I.; Stara, F. Sustainable hospitality and tourism at different ages: Women's and men's attitudes in Italy. *Res. Hosp. Manag.* **2016**, *6*, 83–92. [[CrossRef](#)]
80. Goodman, A. Businesswomen and a sustainable future. *Int. J. Innov. Sustain. Dev.* **2009**, *4*, 179–185. [[CrossRef](#)]
81. Stevens, C. Are Women the Key to Sustainable Development? Sustainable Development Insights, Frederick S. Pardee Center for the Study of the Longer-Range Future, Boston University. 2010. Available online: <http://www.bu.edu/pardee/files/2010/04/UNsdpk003fsingle.pdf> (accessed on 22 September 2017).
82. De Silva, D.G.; Pownall, R.A.J. Going green: Does it depend on education, gender or income? *Appl. Econ.* **2014**, *46*, 573–586. [[CrossRef](#)]
83. Isenhour, C.; Ardenfors, M. Gender and sustainable consumption: Policy implications. *Int. J. Innov. Sustain. Dev.* **2009**, *4*, 135–149. [[CrossRef](#)]
84. Ahmad, S.N.B.; Juhdi, N. Organic Food: A Study on Demographic Characteristics and Factors Influencing Purchase Intentions among Consumers in Klang Valley, Malaysia. *Int. J. Bus. Manag.* **2010**, *5*, 105–118. [[CrossRef](#)]
85. Rezai, G.; Mohamed, Z.; Shamsudin, M.N. Malaysian consumer's perception towards purchasing organically produces vegetable. In *Proceedings of the 2nd International Conference on Business and Economics Research*, Langkawi, Kedah, Malaysia, 14–16 March 2011; pp. 1774–1783.
86. Dalen, H.M.; Halvorsen, B. Gender Differences in Environmental Related Behavior. Statistics Norway. 2011. Available online: [https://www.ssb.no/a/english/publikasjoner/pdf/rapp\\_201138\\_en/rapp\\_201138\\_en.pdf](https://www.ssb.no/a/english/publikasjoner/pdf/rapp_201138_en/rapp_201138_en.pdf) (accessed on 12 January 2018).
87. Chen, T.B.; Chai, L.T. Attitude towards the Environment And Green Products: Consumers' Perspective. *Manag. Sci. Eng.* **2010**, *4*, 27–39.
88. Arvola, A.; Vassallo, M.; Dean, M.; Lampila, P.; Saba, A.; Lähtenmäki, L.; Shepherd, R. Predicting intentions to purchase organic food: The role of affective and moral attitudes in the Theory of Planned Behavior. *Appetite* **2008**, *50*, 443–454. [[CrossRef](#)] [[PubMed](#)]
89. Liu, X.; Wang, C.; Shishime, T.; Fujitsuka, T. Sustainable consumption: Green purchasing behaviors of urban residents in China. *Sustain. Dev.* **2012**, *20*, 293–308. [[CrossRef](#)]
90. United Nations Educational, Scientific and Cultural Organization (UNESCO). Educating for a Sustainable Future: A Transdisciplinary Vision for Concerted Action. 1997. Available online: <http://unesdoc.unesco.org/images/0011/001106/110686eo.pdf> (accessed on 14 January 2018).
91. Katz, D. The functional approach to the study of attitudes. *Public Opin. Q.* **1960**, *24*, 163–204. [[CrossRef](#)]
92. Mostyn, B.J. The Attitude Behavior Relationship, Chester, Chester College of Higher Education. 1978. Available online: <https://dspace.lib.cranfield.ac.uk/bitstream/handle/1826/2968/MCRC%2015.PDF;jsessionid=4ADDFD9315480559247CA0AB43F90DCD?sequence=1> (accessed on 14 January 2018).

93. Carrigan, M.; Attalla, A. The myth of the ethical consumer: Do ethics matter in purchase behavior? *J. Consum. Mark.* **2001**, *18*, 560–578. [[CrossRef](#)]
94. Papaioikonomou, E.; Ryan, G.; Ginielis, M. Towards a Holistic Approach of the Attitude Behavior Gap in Ethical Consumer Behaviors: Empirical Evidence from Spain. *Int. Adv. Econ. Res.* **2011**, *17*, 77–88. [[CrossRef](#)]
95. Belz, F.M.; Peattie, K. *Sustainability Marketing: A Global Perspective*; Wiley: Chichester, UK, 2009.
96. Ajzen, I.; Fishbein, M. The influence of attitudes on behavior. In *The Handbook of Attitudes*; Albarracín, D., Johnson, B.T., Zanna, M.P., Eds.; Erlbaum: Mahwah, NJ, USA, 2005.
97. Daymon, C.; Holloway, I. *Qualitative Research Methods in Public Relations and Marketing Communications*; Taylor & Francis Publishers: Oxford, UK, 2012.
98. Hines, J.M.; Hungerford, H.R.; Tomera, A.N. Analysis and Synthesis of Research on Responsible Environmental Behavior: A Meta-Analysis. *J. Environ. Educ.* **1987**, *18*, 1–8. [[CrossRef](#)]
99. Kraus, S.J. Attitudes and the Prediction of Behavior—A Meta-Analysis of the Empirical Literature. *Pers. Soc. Psychol. Bull.* **1995**, *21*, 58–75. [[CrossRef](#)]
100. Ajzen, I. Nature and Operation of Attitudes. *Ann. Rev. Psychol.* **2001**, *52*, 27–58. [[CrossRef](#)] [[PubMed](#)]
101. Lakatos, E.S.; Dan, V.; Cioca, L.I.; Bacali, L.; Ciobanu, A.M. How Supportive Are Romanian Consumers of the Circular Economy Concept: A Survey. *Sustainability* **2016**, *8*, 789. [[CrossRef](#)]
102. Ajzen, I.; Fishbein, M. *Understanding Attitudes and Predicting Social Behavior*; Prentice-Hall: Englewood Cliffs, NJ, USA, 1980.
103. Ajzen, I. The Theory of Planned Behavior. *Organ. Behav. Hum. Decis. Process.* **1991**, *50*, 179–211. [[CrossRef](#)]
104. Stern, P.C. Toward a coherent theory of environmentally significant behavior. *J. Soc. Issues* **2000**, *56*, 407–424. [[CrossRef](#)]
105. Chatzidakis, A.; Hibbert, S.; Smith, A. Why People Don't Take their Concerns about Fair Trade to the Supermarket: The Role of Neutralisation. *J. Bus. Ethics* **2007**, *74*, 89–100. [[CrossRef](#)]
106. Davies, I.A.; Lee, Z.; Ahonkhai, I. Do consumers care about ethical-luxury? *J. Bus. Ethics* **2012**, *106*, 37–51. [[CrossRef](#)]
107. McLeod, S.A. Attitudes and Behavior. 2014. Available online: [www.simplypsychology.org/attitudes.html](http://www.simplypsychology.org/attitudes.html) (accessed on 14 January 2018).
108. Antonides, G. Economic Psychological Methods. In *Psychology in Economics and Business. An Introduction to Economic Psychology*, 2nd Revised ed.; Kluwer Academic Publishers: Dordrecht, The Netherlands, 1996; pp. 328–356.
109. Darnton, A. *An Overview of Behavior Change Models and Their Uses (Government Social Research Behavior Change Knowledge Review)*; Centre for Sustainable Development, University of Westminster: London, UK, 2008.
110. Kollmuss, A.; Agyeman, J. Mind the Gap: Why do people act environmentally and what are the barriers to pro-environmental behavior? *Environ. Educ. Res.* **2002**, *8*, 239–260. [[CrossRef](#)]
111. Herrmann, C.; Suh, S.H.; Bogdanski, G.; Zein, A.; Cha, J.-M.; Um, J.; Guzman, A. Context-Aware Analysis Approach to Enhance Industrial Smart Metering. In Proceedings of the 18th CIRP International Conference on Life Cycle Engineering, Braunschweig, Germany, 2–4 May 2011.
112. Jackson, T. Motivating Sustainable Consumption: A Review of Evidence on Consumer Behavior and Behavioral Change. Guildford: Centre for Environmental Strategy. 2005. Available online: [http://www.sustainablelifestyles.ac.uk/sites/default/files/motivating\\_sc\\_final.pdf](http://www.sustainablelifestyles.ac.uk/sites/default/files/motivating_sc_final.pdf) (accessed on 24 January 2018).
113. Mayer, F.S.; Frantz, C.M. The connectedness to nature scale: A measure of individuals' feeling in community with nature. *J. Environ. Psychol.* **2004**, *24*, 503–515. [[CrossRef](#)]
114. Bada, M.; Sassa, A. Cyber Security Awareness Campaigns: Why do They Fail to Change Behavior? Global Cyber Security Capacity Centre: Draft Working Paper. 2014. Available online: <http://discovery.ucl.ac.uk/1468954/1/Awareness%20CampaignsDraftWorkingPaper.pdf> (accessed on 14 January 2018).
115. Webb, T.L.; Sheeran, P. Does changing behavioral intentions engender behavior change? A meta-analysis of the experimental evidence. *Psychol. Bull.* **2006**, *132*, 249–268. [[CrossRef](#)] [[PubMed](#)]
116. Sheeran, P.; Webb, T.L. The Intention–Behavior Gap. *Soc. Personal. Psychol. Compass* **2016**, *10*, 503–518. [[CrossRef](#)]
117. Tarkiainen, A.; Sundqvist, S. Subjective norms, attitudes and intentions of Finnish consumers in buying organic food. *Br. Food J.* **2005**, *107*, 808–822. [[CrossRef](#)]
118. Ferraz, S.B.; Buhamra, C.; Laroche, M.; Veloso, A.R. Green products: A cross-cultural study of attitude, intention and purchase behavior. *Ram. Rev. Adm. Mackenzie* **2017**, *18*, 12–38. [[CrossRef](#)]

119. The Guardian. Ethical Consumerism. Available online: <https://www.theguardian.com/money/2001/feb/22/ethicalmoney1> (accessed on 16 January 2018).
120. De Pelsmacker, P.; Driesen, L.; Rayp, G. Do consumers care about ethics? Willingness to pay for fair-trade coffee. *J. Consum. Aff.* **2005**, *39*, 363–385. [[CrossRef](#)]
121. Carrington, M.J.; Neville, B.A.; Whitwell, G.J. Why ethical consumers don't walk their talk: Towards a framework for understanding the gap between ethical purchase intentions and actual buying behavior of ethically minded consumers. *J. Bus. Ethics* **2010**, *97*, 139–158. [[CrossRef](#)]
122. Bray, J.; Johns, N.; Kilburn, D. An exploratory study into the factors impeding ethical consumption. *J. Bus. Ethics* **2011**, *98*, 597–608. [[CrossRef](#)]
123. Chan, R.; Lau, L. Antecedents of Green Purchases: A survey in China. *J. Consum. Mark.* **2000**, *17*, 338–357. [[CrossRef](#)]
124. Steg, L.; Perlaviciute, G.; van der Werff, E. Understanding the human dimensions of a sustainable energy transition. *Front. Psychol.* **2015**, *6*, 805. [[CrossRef](#)] [[PubMed](#)]
125. Hassan, Y.; Nor, M.N.A.M. Understanding consumer decision making towards green electronic products. In Proceedings of the Kuala Lumpur International Business, Economics and Law Conference, Kuala Lumpur, Malaysia, 31 May–1 June 2013.
126. Vicente-Molina, M.A.; Fernández-Sáinz, A.; Izagirre-Olaizola, J. Environmental knowledge and other variables affecting pro-environmental behavior: Comparison of university students from emerging and advanced countries. *J. Clean. Prod.* **2013**, *61*, 130–138. [[CrossRef](#)]
127. Kennedy, T.; Regehr, G.; Rosenfield, J.; Roberts, S.W.; Lingard, L. Exploring the gap between knowledge and behavior: A qualitative study of clinician action following an educational intervention. *Acad. Med.* **2004**, *79*, 386–393. [[CrossRef](#)] [[PubMed](#)]
128. Fietkau, H.J.; Kessel, H. *Umweltlernen: Veraenderungsmoeglichkeiten des Umweltbewusstseins; Modell-Erfahrungen* Hain: Königstein/Ts, Germany, 1981.
129. Frick, J.; Kaiser, F.G.; Wilson, M. Environmental knowledge and conservation behavior: Exploring prevalence and structure in a representative sample. *Pers. Individ. Differ.* **2004**, *37*, 1597–1613. [[CrossRef](#)]
130. Meinhold, J.L.; Malkus, A.J. Adolescent environmental behaviors. Can knowledge, attitudes, and self-efficacy make a difference? *Environ. Behav.* **2005**, *37*, 511–532. [[CrossRef](#)]
131. Couret, D.G. *Sustainability in Developing and Developed Countries*; BVSDE: Washington, DC, USA, 2008.
132. UNESCO. *Sustainable Development in the Least Developed Countries—Towards 2030*; UNESCO: Paris, France, 2016. Available online: <http://unesdoc.unesco.org/images/0024/002448/244835E.pdf> (accessed on 12 September 2017).
133. Kelly, M.J. Overcoming Obstacles to the Effective Implementation of International Environmental Agreements. *Georgetown Int. Environ. Law Rev.* **1997**, *9*, 42. Available online: <https://dspace2.creighton.edu/xmlui/handle/10504/113455> (accessed on 28 March 2018).
134. Ellison, K. Rio+20: How the tension between developing and developed countries influenced sustainable development efforts. *Glob. Bus. Dev. Law J.* **2014**, *27*, 107–128.
135. Reardon, T.; Vosti, S.A. Links between rural poverty and the environment in developing countries: Asset categories and investment poverty. *World Dev.* **1995**, *23*, 1495–1506. [[CrossRef](#)]
136. Schultz, P. Environmental Attitudes and Behaviors across Cultures. *Online Read. Psychol. Cult.* **2002**, *8*. [[CrossRef](#)]
137. Takayama, N.; Petrova, E.; Matsushima, H.; Furuya, K.; Ueda, H.; Mironov, Y.; Petrova, A.; Aoki, Y. Values concerns, and attitudes toward the environment in Japan and Russia. *Urban Reg. Plan. Rev.* **2015**, *2*, 43–67. [[CrossRef](#)]
138. Dunlap, R.E.; Gallup, G.H., Jr.; Gallup, A.M. International public opinion toward the environment. *Impact Assess.* **1993**, *11*, 3–25. [[CrossRef](#)]
139. Dunlap, R.E.; Gallup, G.H., Jr.; Gallup, A.M. Of Global Concern: Results of the Health of the Planet Survey. *Environment* **1993**, *35*, 6–23. [[CrossRef](#)]
140. International Statistical Institute (ISI). Developing Countries. Available online: <https://isi-web.org/index.php/resources/developing-countries> (accessed on 24 December 2017).
141. Dunlap, R.E.; Van Liere, K.D.; Mertig, A.G.; Jones, R.E. New trends in measuring environmental attitudes: Measuring endorsement of the new ecological paradigm: A revised NEP scale. *J. Soc. Issues* **2000**, *56*, 425–442. [[CrossRef](#)]

142. Sullivan, G.M.; Artino, A.R. Analyzing and interpreting data from Likert-type scales. *J. Grad. Med. Educ.* **2013**, *5*, 541–542. [[CrossRef](#)] [[PubMed](#)]
143. Joshi, A.; Kale, S.; Chandel, S.; Pal, D. Likert scale: Explored and explained. *Br. J. Appl. Sci. Technol.* **2015**, *7*, 396–403. [[CrossRef](#)]
144. Pinteau, M.; Stanca, L.; Achim, S.; Pop, I. Is there a connection among environmental and financial performance of a company in developing countries? Evidence from Romania. *Proc. Econ. Financ.* **2014**, *15*, 822–829. [[CrossRef](#)]
145. McStay, J.R.; Dunlap, R.E. Male–female differences in concern for environmental quality. *Int. J. Women’s Stud.* **1983**, *6*, 291–301.
146. Mohai, P. Men, Women, and the Environment: An Examination of the Gender Gap in Environmental Concern and Activism. *Soc. Nat. Resour.* **1992**, *5*, 1–19. [[CrossRef](#)]
147. MacDonald, W.L.; Hara, N. Gender differences in environmental concern among college students. *Sex Roles* **1994**, *33*, 369–374. [[CrossRef](#)]
148. Pillemer, K.; Wells, N.M.; Wagenet, L.P.; Meador, R.H.; Parise, J.T. Environmental sustainability in an aging society: A research agenda. *J. Aging Health* **2011**, *23*, 433–453. [[CrossRef](#)] [[PubMed](#)]
149. Oroian, C.F.; Safirescu, C.O.; Harun, R.; Chiciudean, G.O.; Arion, F.H.; Muresan, I.C.; Bordeanu, B.M. Consumers’ Attitudes towards Organic Products and Sustainable Development: A Case Study of Romania. *Sustainability* **2017**, *9*, 1559. [[CrossRef](#)]
150. United States Environmental Protection Agency (EPA). Sustainable Marketplace: Greener Products and Services. Available online: <https://www.epa.gov/greenerproducts/frequent-questions-about-sustainable-marketplace-and-green-products#One> (accessed on 21 March 2018).
151. Ballantyne, R.; Packer, J. Promoting Environmentally Sustainable Attitudes and Behavior through Free-choice Learning Experiences: What is the State of the Game? *Environ. Educ. Res.* **2005**, *11*, 281–295. [[CrossRef](#)]
152. Shephard, K. Higher education’s role in ‘education for sustainability’. *Aust. Univ. Rev.* **2010**, *52*, 13–22.



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