Values and Green Product Purchase Behavior: The Moderating Effects of the Role of Government and Media Exposure

Ihsan Ullah Jan 1, Seonggoo Ji 2 and Chankoo Yeo 2,*

1 Department of Business Administration, Hanbat National University, Daejeon 34158, Korea; ihsjan10@gmail.com
2 Department of Business Administration and Accounting, Hanbat National University, Daejeon 34158, Korea; sgji@hanbat.ac.kr
* Correspondence: ringforever1983@gmail.com

Received: 13 November 2019; Accepted: 22 November 2019; Published: 24 November 2019

Abstract: This study applies the theory of planned behavior and value–attitude–behavior hierarchy model to examine the influence of green product consumption values on the green product buying attitude and green product purchase behavior. Additionally, unlike the previous studies, the current study explores the moderating effects of the role of government and media exposure in the relationships. Data was collected by an online survey from 238 green product consumers in China. Structural equation modeling was applied for testing the hypothesized relationships. The results of the study have indicated that ecological value and economical value have not significantly influenced the green product buying attitude. In contrast, the health and safety values of green product have positively influenced the green product buying attitude. Moreover, the buying attitude of consumers has a significant positive effect on green product purchase behavior. Furthermore, the results showed that the role of government and media exposure have significantly moderated the relationship between safety value and buying attitude of green product.

Keywords: green product; values; buying attitude; green product purchase behavior; role of government; role of media exposure

1. Introduction

Recently, environmental concerns and environmental sustainability have gained considerable attention across the world. Both researchers and practitioners discuss green products purchasing, sustainable, and ethical consumptions more than any point of time in history. Such extensive concerns for protecting natural environment and highly-emphasized sustainable consumption also trigger to change consumer’s buying preferences [1]. Relatively, in recent times, consumers show unprecedented interests in purchasing eco-friendly products [2] and making transactions in eco-conscious organizations [3,4]. As a bigger component of sustainable consumption, green product consumption has drawn more attention from corporate decision makers, customers, and other stakeholders who propagate the idea of preservation of natural resources. Primarily, green products are those products that use less resource, have lower impacts and risks to the environment, and prevent waste generation already at the conception state [5].

In order to deeply understand the underlying mechanism of customer green product consumption behaviors, more studies are being continuously asked to explore new avenues. In this regard, researchers often discuss individual-level factors and determinants which strongly predict green product consumption behaviors. For instance, prior studies show that individual-level factors such as
values, attitudes, beliefs, and social norms play vital roles in predicting the green product purchase behaviors. To be very specific, unlike the attitudes and beliefs, values are the guiding principles which determine attitudes and behaviors of any individuals [6]. Hence, in the prior literature, researchers have investigated different individual-level values in relation to beliefs, norms, environmental concerns, and behavior intention of the consumers. However, a very handful studies have discussed values such as ecological values, economic values, health, and safety values in the context of green products in relation to green product buying attitude and green product purchase behaviors. These values seem important predictors for the consumer’s green product buying attitude in general and the consumers of developing nations in particular. This is because, the existing studies have demonstrated that values such as functional values, social values, and emotional values are some of the major determinants to green product purchase across the world [7].

Similarly, in the extant literature, the importance of moderating variable for the green product consumption has also been emphasized. Researchers have examined different factors to moderate the relationships in the framework of green product consumption. Generally, the demographic factors such as gender, income, education, and product attributes such as premium price, country-of-origin were discussed as moderating variables for the green product purchase behavior [8,9]. However, researchers have overlooked the importance of external factors such as the role of government and the role of media exposure to moderate the relationships. Therefore, studies are needed to explore the moderating role of role of government, as well as media exposure in the relationship of values and buying attitude formation.

Moreover, in the extant literature, significant numbers of studies have examined the relationship between green product buying attitude and green product behavior intention; however, the direct relationship between attitude and behavior in the context of green product has rarely been discussed. Although some of predominant studies in consumer psychology have frequently shown the direct influence of attitude on purchasing behavior. Specifically, the value–attitude–behavior hierarchy model has argued the indirect effect of value on behavior through attitude in different cross culture contexts [10]. Therefore, a further broader understanding of direct relationship between attitude and purchase behavior is needed in the context of green product purchasing behavior.

These aforementioned academic gaps in the literature reveal that understanding of the green product in different context still remained under-developed and further study is needed to address them. Hence, the present study attempts to address those academic gaps. Specifically, in the present study, values such as ecological, economical, health, and safety values will be discussed in relation to the buying attitude of consumers. Second, the current study will explore the role of government and media exposure in the influence of relationship between the values and attitudes of green products. Third, in this study, we will explore the direct relationship between buying attitude and green product purchase behavior.

Theoretically, the current study intends to contribute in several ways. First, the current study will shed light on the importance of ecological, economic, health, and safety values as predictors to green product buying attitude and green product purchase behavior. Second, the current study explores the moderating role of external factors such as the role of government and media exposure on the relationship between values and attitude for the green products. Third, the current study will contribute to the literature by exploring the rarely discussed direct relationship between green product buying attitude and green product purchase behavior.

Managerially, findings of this study will provide new insights to practitioners to leverage values such as ecological, economical, health, and safety in more innovative ways to enhance the green product purchasing behavior. The sales managers and marketers can add the aforementioned values as fundamental components of their value proposition in order to achieve the objectives of sustainable consumption and high profitability. Second, the findings of the study will also equip managers to exploit external factors such as the role of government and media exposure in the formation of favorable attitude for green products which in turn lead to green product purchase behavior.
2. Literature Review

2.1. Theory of Planned Behavior, Value–Attitude–Behavior Hierarchy Model

The current study applies the theory of planned behavior and value–attitude–behavior hierarchy to examine the relationship between values, attitude, and green product purchase behavior. Primarily, the theory of planned behavior was proposed and validated by Ajzen in 1985 [11]. Specifically, in its rudimentary form, the framework comprises of four constructs, namely; Subjective norm, perceived behavioral control, attitude, behavioral intention, and eventually the behavior [12]. In the prior literature, theory of planned behavior has been extensively discussed and empirically validated in a wide range of fields such as organizational studies, management, leadership, and marketing [13]. More recently, few researchers have used this framework in predicting consumer intention and behavior to green/pro-environmental products [14,15] such as green hotels and restaurants [3,4,16], energy efficient products [17], green products [18,19], and organic products [1,20]. In this regard, the researchers have examined not only the four fundamental constructs of the framework but they also included other additional constructs in order to improve the predictor power of the framework [15]. For instance, some of the mostly investigated constructs in this framework are environmental concerns [21], perceived moral obligations [16], environmental knowledge [15], and values [22]. Each newly added construct of the framework is undergoing further investigation and categorization in different research settings and contexts.

Similarly, value–attitude–behavior hierarchy is another predominant model in the literature of social psychology, which discusses the relationship between value and behavior through attitude [23–25]. To be very specific, Homer and Kahli [26] have conceptualized the value–attitude–behavior hierarchy model while examining the significance of value on the attitude and behaviors of natural food shopping consumers. Since then, researchers have employed this model in different contexts such as recycling behavior [27], organic food purchasing behavior [28], customer healthy food choice [29], and consumer green purchase behavior [30]. Similar to the previous studies, in the current study we explore the theory of planned behavior and value–attitude–behavior hierarchy in the context of green product by discussing the influence of values on the buying attitude and green product purchase behavior.

2.2. The Influence of Values on Buying Attitude

Value is defined as “a desirable trans-situational goal varying in importance, which serves as a guiding principle in the life of a person or other social entity” (p. 21) [31]. In other words, values are those guiding principles which serve as the foundation for organizing an individuals’ beliefs, attitudes, and eventually their behaviors [32–37].

In the literature of sales and marketing, it is often reported that people’s values and beliefs have a significant role in their purchasing decisions which eventually influence their actual behaviors. Specifically, researchers have examined values as predictors in the context of green/pro-environmental consumptions. For instance, most recently Verma, Chandra, and Kumar (2019) have discussed and found the important role of individual’s biospheric, altruistic, and egoistic values on environmental concern, green hotel attitude, and green hotel visit-intention in the context of India [22]. Similarly, Schwartz (1994) proposed a set of ten basic individual values which are power, achievement, hedonism, stimulation, self-direction, universalism, benevolence, tradition, conformity, and security [34]. All of these goals are further categorized into various opposing dimensions. For instance, conservation vs. openness to change, self-transcendence vs. self enhancement [38]. Consistent with such comprehensive understandings of values, in the current study we examine ecological values as part of the self-transcendence value. This is because the underlying ecological concerns of the individuals are caring more about the environment which eventually affects the lives of others. In contrast, economic, health, and safety values are considered as self-enhancement values because of the concerns of individuals toward themselves.
2.2.1. Ecological Value and Buying Attitude

In contemporary psychology, attitude refers to person’s evaluation of a certain object [39]. A study reported that attitude acts as key antecedents of behavior; therefore, it is an integral component of other behavioral theories such as theory of planned behavior [40] and value–attitude–behavior hierarchy model. In the context of green product, attitude is a type of specific attitude, which refers to the predisposition about the green products based on their ecological and environmental positive consequences. While making the decision to purchase, the environmentally-conscious consumers prefer to purchase those products which are ecological and use natural ingredients in cosmetics, wood products from sustainable forests, organic vegetables, ozone-friendly aerosols, and that are biodegradable, not tested on animals, and in the case of petrol, is unleaded [40]. Ayadi and Lapeyre (2016) reported that modern consumers across the world are aware about the ecological benefits and features of products more than the prior generation, which in turn influence their perceived values of green product [41]. Based on these arguments, we propose that ecological benefits of the green products can enhance the green product buying attitude of the consumers. Hence, we propose that

**Hypothesis H1.** The ecological value of the green products positively relates to the buying attitude.

2.2.2. Economic Value and Buying Attitude

In the literature of consumer-centric sustainability, the economic value of a product can be described as conscious sense of creating one’s long-term economic and personal wellbeing [42]. In other words, if the consumer has intention for sustainable consumption then he or she prefers green and fair-traded products [43]. Specifically, similar to the functional value, the economic value of green product refers to perceived economic utility of a product which is derived from the attributes of product such as durability, reliability, and price. In the prior literature, the functional value of green product has been discussed extensively. As a construct, the functional value (economic value) of the product and service explains that the net utility derives from the perceived quality attributes and the price of the product [44]. Findings in the previous study show that the green product buying attitude is enhanced by the functional values of the product in the context of China [45]. Consistent with the findings, it is likely that the economic value of green product can enhance the green product buying attitude. Therefore, for the current study we hypothesize

**Hypothesis H2.** The economic value of the green products positively relates to the buying attitude.

2.2.3. Health Value and Buying Attitude

In the prior literature, it has been discussed that health consciousness stimulates consumers to undertake health related decisions and actions. More precisely, Michaelidou and Hassan (2008) have stated that “health-conscious consumers are aware and concerned about their state of well-being and are motivated to improve and/or maintain their health and quality of life, as well as preventing ill health by engaging in healthy behaviors and being self-conscious regarding health” (p. 164) [46].

In the past studies, researchers have shown that consumers who are interested in their health prefer to purchase green products such as organic foods which consumers consider as healthy products [47–49]. In this regard, researchers have discussed that health-related attributes such as health preservation and health improvement play a vital role in the purchase decisions of organic product [50–53]. Similarly, in another empirical study, researchers have examined and found a positive relationship between health values of the local foods and the attitude of local foods [54]. Moreover, Ghazali et al. (2017) found that the health value of the organic personal care products relates to the buying attitude of the products positively [53]. Consistent with findings of above-mentioned studies, it is highly likely that the health related benefits and attributes of the green products increase the buying attitude of green products. Hence, we hypothesize that
Hypothesis H3. The health value of the green products positively relates to the buying attitude.

2.2.4. Safety Value and Buying Attitude

Along with the health-related benefits of the products, consumers in the 21st century give importance to the safety-related benefits of products during their purchasing decisions. Specifically, in China the safety related concerns are highly prevalent among the consumers since the tragic incident of melamine-tainted milk products in 2008 which caused death and illness in thousands of children [51]. Likewise, the most vulnerable segment of consumers such as pregnant women and the elderly people relatively show more concerns about health and safety-related attributes of every-day products [55]. One of the possible reasons for such concerns is the abundance of toxic chemicals, or drugs in the everyday products [55]. In the prior literature, the perceived safety value of product refers to the degree of which the consumers feel that the consumption of the product is harmless and free from synthetic chemicals [56]. Yin et al. (2010) have stated that the chemical components of the products are the key determinants to purchase decision and the study has found that about 67.5% of the respondents purchase organic products because of the lack of chemical components [52]. Similarly, another study in Malaysia has also discussed the significance of safety value in attitude making for organic personal care products [53]. The findings of this study showed that safety value of the organic personal care products predicted attitude of organic personal care products positively. Thus, it is evident that consumers evaluate products based on the safety values during their purchasing decision in various contexts. Hence, we propose that the safety value of green product increase the buying attitude of green product and thus we hypothesize that

Hypothesis H4. The safety value of the green products positively relates to the buying attitude.

2.3. The Influence of External Factors

Along with internal factors such as values, the external factors also play a vital role in the formation of positive attitude about the green products. Recently, a study has emphasized the role of external factors such as the role of government and media exposure to shape consumer’s environmental attitude and product attitude [57,58]. Specifically, Chen et al. (2018) defined the role of government as “consumer believes that environmental protection is a governmental duty” (p. 4) [57]. In other words, people who are interested in the pro-environmental consumption strongly consider the environmental protection as the one of the primary responsibilities of government. Recent findings of a scientific study have shown that the role of the government has positively influenced the attitude for the green products in the belt and road countries of Asia [57]. Similarly, Hiller Connell (2011) held the view that governmental policies are instrumental in predicting the environmental attitude of consumers [59]. Furthermore, another study has reported that the role of government in the protection of environment positively affect consumer’s attitude towards green products [60]. Based on these findings, for the current study we propose that the role of the government can be instrumental in providing the guiding principles to the consumers, which in turn will influence the effect of health value and safety value of green product on green product buying attitudes. Hence, we propose that

Hypothesis H5a. The role of the government moderates the positive relationship between health values and buying attitudes of consumers.

Hypothesis H5b. The role of the government moderates the positive relationship between safety values and buying attitudes of consumers.

Similarly, media exposure also plays a major role in environmental awareness and widespread dissemination of important environmental concerns to the targeted audiences. Media exposure is defined as any opportunity for a reader, viewer, or listener to see or hear an advertising message in a
particular media vehicle. Specifically, in the context of green product, media exposure refers to the persuasive and appealing messages, disseminated by particular media vehicle about the consumption of green products. Likewise, some of the existing studies in the literature have discussed the role of the media in the formation of attitude of the consumer in general and towards the green products in particular. To be very specific, Holbert et al. (2003) have examined the role of media exposure and argued that exclusive media content about the environment can have positive influence on environmental attitude of the consumers [61]. Similarly, Wray et al. (2005) have supported the idea of the previous studies about the significance of media exposure in shaping consumer’s environmental attitude and behaviors [62]. Hence, in consistence with the findings of these studies, we argue that a vibrant media campaign in support of the green product can influence consumer’s buying attitude towards green products in general and can influence the effect of health and safety value of green product on the green product buying attitude. Thus, we hypothesize that

Hypothesis H6a. Media exposure moderates the positive relationship between health values and buying attitudes of consumers.

Hypothesis H6b. Media exposure moderates the positive relationship between safety values and buying attitudes of consumers.

2.4. The Influence of Green Product Buying Attitude on Green Product Purchase Behavior

In the previous studies, the theory of planned behavior has frequently explained the significant relationship between attitude, behavioral intention, and actual behavior of consumers. To be very specific, in the context of the green product consumption, green product purchase behavior refers to the purchase of environmentally friendly products or sustainable products which are recyclable and beneficial to the environment and avoiding those products which harm the environment and society [30,63,64]. In the prior literature, a positive relationship between attitude and behavior has been established across different industries and cultures. Generally, this relationship has been investigated in the presence of behavioral intention as mediator [40,65]. Additionally, researchers have found that the relationship between attitude and purchase behavior is often mediated by purchase intention of the consumers. Nevertheless, some studies in the existing literature have addressed the influence of green product buying attitude on green product purchasing behavior. For instance, Jacobs, Petersen, Horisch and Battenfeld (2018) have examined and found the positive direct relationship between attitude and purchase behavior of sustainable clothing [40]. In line with these findings, we propose that the consumer’s positive buying attitudes toward the green products will enhance their green purchase behavior.

Hypothesis H7. A positive buying attitude towards green products enhances green product purchase behavior.

3. Methodology

3.1. Measurements

In order to test the proposed research model which is shown in Figure 1, the current study has adopted a quantitative method via an online survey in China. The measurement items of the key variables are taken and adapted from the prior literature both from Korean and international publications. Specifically, ecological value was measured by using three items adapted from the study of Khan and Mohsin [66]. Economic value was assessed by three items taken and adapted from the study of Lin and Huang [44]. Similarly, the health and safety value were measured by using three items, respectively from the study of Jin [67]. The role of government and media exposure were measured, respectively by using two items taken and adapted from the study of Chen et al. [57]. Green product buying attitude was measured by three items based on the item from the study of Yadav and Pathak [65]. Finally, the green product purchase behavior was measured by using three items from the
study of Lee [68]. All the responses were assessed by 5-point Likert-type responses wherein (1) stands for strongly disagree and (5) strongly agree. All of the measurement items of constructs are given in the Appendix A of the study.

3.2. Samples and Data Collection

All of the measured items used in this study were taken from those previous studies which can be coordinated with the current research context. Primarily, the questionnaire was prepared in English and then it was translated into Chinese language to get the consumer responses with precision and accuracy. In order to collect the data; first, a pretest was conducted and based on that, we modified the scales partially. This is because, when scales are developed in one country and we apply them in another, it is necessary to evaluate whether the versions of each scale are similar [69]. Second, the translation of the survey was done based on the procedure proposed by Brislin [70]. In order to check the accuracy and equivalence, the questionnaire was back-translated into English and compared with the original [71].

Subsequently the authors have contacted an internet-specialized research site in China to collect data. To be very specific, the research site approached Chinese green product consumers based in Beijing and Shanghai who have previously purchased green products. The survey was conducted from 9 April 2017 to 9 May 2017. Once the data was collected then the formal analysis for the study was conducted through SPSS V.21 and AMOS V.21. By using SPSS V.21, we conducted the preliminary analysis including descriptive statistics and checking reliability and validity of the measurement model. Likewise, the AMOS V.21 is used for measurement model assessment, structural model assessments, and hypotheses checking.

As a result of preliminary analysis some of the missing data were eliminated and a total of 238 samples were selected for final analysis. Table 1 shows the demographic characteristics of the respondents. Specifically, Table 1 shows that 39.1% of the respondents were males and 60.9% were females. Similarly, based on the age group, 63.0% of the respondents were in their 20s, 24.8% were in their 30s, 7.6% were in their 40s and, 4.2% were in their 10s. The 48.3% of respondents were company employees, 20.2% were government employees, 16.8% were students, 13.4% were personal business, 5.5% were others.
Table 1. Demographic characteristics of respondents.

<table>
<thead>
<tr>
<th>Demographics</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>93</td>
<td>39.1</td>
</tr>
<tr>
<td>Female</td>
<td>145</td>
<td>60.9</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 s</td>
<td>10</td>
<td>4.2</td>
</tr>
<tr>
<td>20 s</td>
<td>150</td>
<td>63.0</td>
</tr>
<tr>
<td>30 s</td>
<td>59</td>
<td>24.8</td>
</tr>
<tr>
<td>40 s</td>
<td>18</td>
<td>7.6</td>
</tr>
<tr>
<td>≥50 s</td>
<td>1</td>
<td>0.4</td>
</tr>
<tr>
<td>Job</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student</td>
<td>40</td>
<td>16.8</td>
</tr>
<tr>
<td>Home-makers</td>
<td>9</td>
<td>3.8</td>
</tr>
<tr>
<td>Government Employee</td>
<td>48</td>
<td>20.2</td>
</tr>
<tr>
<td>Company Employee</td>
<td>96</td>
<td>40.3</td>
</tr>
<tr>
<td>Personal Business</td>
<td>32</td>
<td>13.4</td>
</tr>
<tr>
<td>Others</td>
<td>13</td>
<td>5.5</td>
</tr>
</tbody>
</table>

3.3. Reliability and Validity Analysis

In order to assess the measurement and structural models, we applied the two-step approach recommended by Anderson and Gerbing (1988) [72]. Based on this recommendation, the validity and reliability of the constructs were assessed by the measurement model and similarly hypotheses testing and model fitness were assessed by using “Covariance-Based Structural Equation Modeling” in SPSS V.21 and AMOS V.21, respectively. The given Table 2 shows the results of the reliability and validity of the measurement items used for the current study.

Table 2. Results of confirmatory factor analysis.

<table>
<thead>
<tr>
<th>Latent Variable</th>
<th>Items</th>
<th>Loadings</th>
<th>Cronbach’s α</th>
<th>CR</th>
<th>AVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecological value</td>
<td>ECO1</td>
<td>0.65</td>
<td>0.81</td>
<td>0.81</td>
<td>0.59</td>
</tr>
<tr>
<td></td>
<td>ECO2</td>
<td>0.82</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ECO3</td>
<td>0.82</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health value</td>
<td>HEA1</td>
<td>0.97</td>
<td>0.92</td>
<td>0.92</td>
<td>0.80</td>
</tr>
<tr>
<td></td>
<td>HEA2</td>
<td>0.81</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>HEA3</td>
<td>0.90</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Economic value</td>
<td>EMIC1</td>
<td>0.88</td>
<td>0.91</td>
<td>0.91</td>
<td>0.76</td>
</tr>
<tr>
<td></td>
<td>EMIC2</td>
<td>0.86</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EMIC3</td>
<td>0.88</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safety value</td>
<td>SAF1</td>
<td>0.91</td>
<td>0.86</td>
<td>0.88</td>
<td>0.71</td>
</tr>
<tr>
<td></td>
<td>SAF2</td>
<td>0.66</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SAF3</td>
<td>0.93</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buying attitude</td>
<td>ATT1</td>
<td>0.91</td>
<td>0.92</td>
<td>0.92</td>
<td>0.80</td>
</tr>
<tr>
<td></td>
<td>ATT2</td>
<td>0.94</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ATT3</td>
<td>0.82</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Purchase behavior</td>
<td>BEH1</td>
<td>0.83</td>
<td>0.91</td>
<td>0.91</td>
<td>0.77</td>
</tr>
<tr>
<td></td>
<td>BEH2</td>
<td>0.89</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>BEH3</td>
<td>0.92</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Role of government</td>
<td>GOV1</td>
<td>0.86</td>
<td>0.85</td>
<td>0.85</td>
<td>0.74</td>
</tr>
<tr>
<td></td>
<td>GOV2</td>
<td>0.87</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Media exposure</td>
<td>MED1</td>
<td>0.86</td>
<td>0.88</td>
<td>0.88</td>
<td>0.79</td>
</tr>
<tr>
<td></td>
<td>MED2</td>
<td>0.91</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

$\chi^2 = 347.23$, df = 181, $Q = 1.92$, RMR = 0.02, RMSEA = 0.06, GFI = 0.88, TLI = 0.95, CFI = 0.96.$
To begin with, the confirmatory factor analysis (CFA) was conducted to assess the validity of the proposed model. Hair et al. [73] underscores that most model-fit indices should attain the acceptable standards in order to be eligible for model fitness. The results show that the measurement model fits to the data such as, $\chi^2 = 347.23$, df = 181, Q = 1.92, RMR = 0.02, RMSEA = 0.06, GFI = 0.88, TLI = 0.95, and CFI = 0.96. The Q-value shows the change of $\chi^2$ with increasing or decreasing degree of freedom. It should be less than 3.0 to satisfy the overall fit [74]. All the model fit indices exceeds the recommended values, indicating adequate fitness of the model.

Similarly, the reliability of the measurement items was assessed by examining the factor loading and the internal consistencies on the constructs [75]. Results indicated standard estimates that ranged from 0.65 to 0.96 along with Cronbach’s Alpha values which ranged from 0.81 to 0.92.

With factor loadings significant at 1%, for the sample, thus convergent validity of the measures was supported [76]. Additionally, the average variance extracted (AVE) which ranged from 0.59 to 0.80 is larger than the cutoff value of 0.50. Discriminant validity was established by comparing shared AVE values between pairs of constructs with their squared phi correlations. In all cases, AVE values were greater than the shared squared phi correlations associated with each pair of constructs. This suggests discriminant validity, which is an indication that the constructs are distinct from one another as emphasized by Fornell and Larcker [76]. Table 3 presents the descriptive statistics and the correlation matrix. The correlation coefficients ranged from 0.46 to 0.87. The correlations were significant at the 0.01 levels of significance.

### Table 3. Correlation matrix.

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>S.D.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecological value</td>
<td>4.14</td>
<td>0.60</td>
<td>1</td>
<td>0.56 **</td>
<td>0.68 **</td>
<td>0.63 **</td>
<td>0.53 **</td>
<td>0.52 **</td>
<td>0.46 **</td>
<td>0.46 **</td>
</tr>
<tr>
<td>Healthy value</td>
<td>4.49</td>
<td>0.61</td>
<td>1</td>
<td>0.72 **</td>
<td>0.70 **</td>
<td>0.62 **</td>
<td>0.62 **</td>
<td>0.53 **</td>
<td>0.52 **</td>
<td>0.54 **</td>
</tr>
<tr>
<td>Economic value</td>
<td>4.28</td>
<td>0.59</td>
<td>1</td>
<td>0.69 **</td>
<td>0.61 **</td>
<td>0.60 **</td>
<td>0.55 **</td>
<td>0.50 **</td>
<td>0.52 **</td>
<td>0.54 **</td>
</tr>
<tr>
<td>Safety value</td>
<td>4.33</td>
<td>0.62</td>
<td>1</td>
<td>0.61 **</td>
<td>0.61 **</td>
<td>0.46 **</td>
<td>0.50 **</td>
<td>0.51 **</td>
<td>0.52 **</td>
<td>0.54 **</td>
</tr>
<tr>
<td>Buying attitude</td>
<td>4.20</td>
<td>0.69</td>
<td>1</td>
<td>0.68 **</td>
<td>0.61 **</td>
<td>0.50 **</td>
<td>0.57 **</td>
<td>0.58 **</td>
<td>0.59 **</td>
<td>0.60 **</td>
</tr>
<tr>
<td>Purchase behavior</td>
<td>4.13</td>
<td>0.68</td>
<td>1</td>
<td>0.56 **</td>
<td>0.52 **</td>
<td>0.56 **</td>
<td>0.55 **</td>
<td>0.56 **</td>
<td>0.57 **</td>
<td>0.58 **</td>
</tr>
<tr>
<td>Role of government</td>
<td>4.12</td>
<td>0.76</td>
<td>1</td>
<td>0.87 **</td>
<td>0.87 **</td>
<td>0.87 **</td>
<td>0.87 **</td>
<td>0.87 **</td>
<td>0.87 **</td>
<td>0.87 **</td>
</tr>
<tr>
<td>Media exposure</td>
<td>4.11</td>
<td>0.77</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

**p < 0.01.

### 3.4. Model Fit and Hypotheses Test

The structural model analysis of the proposed model shows that the value of the indices of model fitness are above the recommended cutoff values such as $\chi^2 = 226.58$, df = 124, Q = 1.83, RMR = 0.03, RMSEA = 0.06, GFI = 0.90, TLI = 0.97, and CFI = 0.97. The Q-value shows the change of $\chi^2$ with increasing or decreasing degree of freedom. It should be less than 3 to satisfy the overall fit. RMR should be less than 0.05, RMSEA less than 0.08, TLI, CFI and GFI more than 0.9 to be valid. The results of the model fitness were higher than the suggested goodness-of-fit values which show that the hypothesized model fit the data very well. The results of the hypothesized relationships are shown in Table 4.

### Table 4. Results of SEM (Research Model).

<table>
<thead>
<tr>
<th>Relationship of Variables</th>
<th>Hypotheses</th>
<th>β</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecological value → Buying attitude</td>
<td>H1(+)</td>
<td>0.09</td>
<td>Non-supported</td>
</tr>
<tr>
<td>Economic value → Buying attitude</td>
<td>H2(+)</td>
<td>0.16</td>
<td>Non-supported</td>
</tr>
<tr>
<td>Health value → Buying attitude</td>
<td>H3(+)</td>
<td>0.26 **</td>
<td>Supported</td>
</tr>
<tr>
<td>Safety value → Buying attitude</td>
<td>H4(+)</td>
<td>0.32 **</td>
<td>Supported</td>
</tr>
<tr>
<td>Buying attitude → Purchase behavior</td>
<td>H7(+)</td>
<td>0.76 **</td>
<td>Supported</td>
</tr>
</tbody>
</table>

$\chi^2 = 226.58$, df = 124, Q = 1.83, RMR = 0.03, RMSEA = 0.06, GFI = 0.90, TLI = 0.97, CFI = 0.97, **p < 0.01.
Specifically, the results showed that the ecological value has not significantly affected green product buying attitude ($\beta = 0.09$, $p > 0.05$, non-supporting H1). Similarly, H2 was not supported because the economic value does not have a significant effect on green product buying attitude ($\beta = 0.16$, $p > 0.01$). Health value has positive effects on the product attitude ($\beta = 0.26$, $p < 0.01$) which supported H3 of the study. Similarly, safety value has positive effect on the green product buying attitude ($\beta = 0.32$, $p < 0.01$) which supports H4 of the study. Finally, the results showed that H7 of the study was supported because green product buying attitude had a significant effect on purchase behavior ($\beta = 0.76$, $p < 0.01$).

H5 and H6 have discussed the moderating effects of the role of the government and media exposure on the relationship between health/safety value and attitude. In order to check the moderation effects of role of government and media exposure, we conducted a multi-group analysis. Multi-group analysis is one of the methods used to test the differences between two groups. The median of moderating variables is obtained to get within-group homogeneity and between-group heterogeneity. On the basis of this, we divide it into two groups and analyze the differences between them [77]. The equal model specifies that parameters are assumed to be the same by setting the relational expression of the structural model between the upper and lower groups the same. On the other hand, the free model assumes that all relationships are the same except for one relationship that is affected by the moderating variables. The difference between the $\chi^2$ values of the two models determines the effect of the moderating variable. By freely setting the equality model and one relation, the $\chi^2$ (1) value on the free model with one degree of freedom must exceed the threshold of 3.84. Based on these results, multi-group analysis was performed by dividing the government’s role variable into two groups (high vs. low).

Table 5 shows the results of the moderating analysis of the role of government on the health and safety values and the green product buying attitude. The impact of consumer’s perceived health value on green product buying attitude was found to be more positive in the group with less awareness of the role of government than in the high group. Contrary to the hypothesized relationship, these results indicate that, if the overall healthy value of consumers perceived is similar, consumers with less awareness of the role of government have a more positive attitude toward green products than high consumers. Therefore, the hypothesis H5a was not supported. Similarly, the impact of consumer’s perceived safety value on product attitude was found to be more positive in the group with more awareness of the role of government than in the low group. These results indicate that, if the overall safety value of consumers perceived is similar, consumers with more awareness of the role of government have a more positive attitude toward green products buying than low consumers, which supported H5b of the study.

Table 5. Moderating effect (role of government).

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Hypotheses Path</th>
<th>Path Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>H5a</td>
<td>Equal Model</td>
<td>$X(94)^2 = 459.7$</td>
</tr>
<tr>
<td>Health value $\rightarrow$ Buying attitude</td>
<td>$X(93)^2 = 468.9$</td>
<td>Low Group</td>
</tr>
<tr>
<td></td>
<td>$\Delta X(1)^2 = 9.12$ sig</td>
<td>High Group</td>
</tr>
<tr>
<td>H5b</td>
<td>Equal Model</td>
<td>$X(94)^2 = 459.7$</td>
</tr>
<tr>
<td>Safety value $\rightarrow$ Buying attitude</td>
<td>$X(93)^2 = 467.2$</td>
<td>Low Group</td>
</tr>
<tr>
<td></td>
<td>$\Delta X(1)^2 = 7.5$ sig</td>
<td>High Group</td>
</tr>
</tbody>
</table>

** $p < 0.01$.

Table 6 shows the results of the moderating analysis of the role of media exposure on the health and safety values of green product on green product buying attitude. The impact of consumer’s perceived healthy value on product attitude was found to be more positive in the group with less awareness of the media exposure than in the high group. These results indicate that, if the overall health value of consumers perceived is similar, consumers with less awareness of the media exposure
have a more positive attitude toward green products buying than high consumers, which was contrary to the hypothesized relationship. Therefore, H6a of the study was not supported. Similarly, the impact of consumer’s perceived safety value on product attitude was found to be more positive in the group with more awareness of the media exposure than in the low group. These results indicate that, if the overall safety value of consumers perceived is similar, consumers with more awareness of the media exposure have a more positive attitude toward green products than low consumers, which supported the H6b of the study.

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Hypotheses Path</th>
<th>Path Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>H6a</td>
<td>Equal Model</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Health value → Buying attitude</td>
<td>$X(94)^2 = 484.6$</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$X(93)^2 = 497.5$</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$\Delta X(1)^2 = 12.9$</td>
</tr>
<tr>
<td>H6b</td>
<td>Equal Model</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Safety value → Buying attitude</td>
<td>$X(94)^2 = 484.6$</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$X(93)^2 = 492.1$</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$\Delta X(1)^2 = 7.5$</td>
</tr>
</tbody>
</table>

** $p < 0.01$.

4. Discussion and Conclusion

4.1. Theoretical Implications

The current study has contributed to the theory in several ways. First, this study has discussed the relationship between values and green product buying attitude in detail. Specifically, the current study has explored ecological value, economic value, health value, and safety value on the green product buying attitude as predictors in the context of China and found that health value and safety value predict green product attitude positively. As the prior literature reveals that researchers have overlooked to examine the relationships between values and green product buying attitude.

Second, unlike the previous studies, in the current study, the researchers have discussed the direct relationship between the green product buying attitude and green product purchase behavior in the context of China and found that there is a significant positive relationship between them.

Third, in the existing studies, the researchers have generally explored the demographic variables as moderating variable, however, in the current study we explored the role of government and media exposure to moderate the relationship between health and safety values and attitude of green products. Results show that the role of government and media exposure moderate the positive relationship between safety values and green product buying attitude in the context of China.

4.2. Managerial Implications

The findings of the current study provide insights to marketing and brand managers in order to increase the green product purchasing behavior. First, the results show that values which serve as the guiding principle in the life of any person can play a pivotal role in the decision-making process of buying [31]. In line with the value–attitude–behavior hierarchy, the findings of the current study show that health and safety value of green products have significant positive relationship with the green product purchasing behavior. Contrary to the hypothesized relationships of ecological value and economic value, and the green product buying attitude, the results show that green product ecological value and economic value are not significantly related to the green product buying attitude in the context of China. Based on these findings, the brand and sales managers are advised to consider the health and safety attributes of green products extensively. In this regard, the management can differentiate green products by highlighting the important health and safety attributes of green products. To highlight effectively, the management can adopt the following in several ways.
First, the product label should provide information about the health and safety benefits of green product properly. To be very specific, the product manager should work on increasing the readability of the product label by considering the label design, label language, and label attractiveness. For example, in general, the green products are imported in many countries. Therefore, the label in local language can increases the visibility of the health and safety values of green products. Furthermore, the presence of information about the findings of the product-tests such as product toxicity test, hypoallergenic, and dermatological tests from the accredited laboratory can enhance the safety and health value of the green product [53]. Third, the management can exploit the role of government to convey the message of green product safety which increase green product buying attitude. In this regard, the companies can collaborate with local and state level governments in educating the benefits of the green product consumption such as safety values. Finally, the marketing managers are asked to consider the role of media exposure of the green product. In this regard, they can design creative campaigns emphasizing on the safety values of the green products.

Along with the theoretical and managerial implication of the study, the findings of current study offer insights to the policy makers who are interested in increasing the green consumption. To begin with, the findings of the study show that governments play a vital role as a moderating in predicting green product buying attitudes. In this regards, the local and state level government can make regulations to support green consumption which will be instrumental to obtain the green consumption goals. According to some English news outlets the government of China is already tightening green product regulations. Specifically, the China’s Certification and Accreditation Administration has announced to establish a unified system for the standardization, certification and identification of green products by 2020. [78] In this regards, the findings of this study will be helpful to incorporate the attributes such as safety and health values of the green product in the regulation. This is because the findings show that these attributes are a strong predictor of buying attitudes. Moreover, the policy makers can also exploit the role of media exposure in order to increase the buying attitude and purchase behavior of green products.

4.3. Limitations and Future Researches

Despite the important theoretical and managerial contributions, the current study has several limitations which offer avenues for future researches. Specifically, in the current study the researchers have incorporated green product buying attitude as outcome variables for the values, which have been rarely discussed in the prior literature. Hence, in the future studies, researchers can explore other variables such as environmental concerns and behavioral intention which have been mostly discussed in the prior literature as mediating variables.

Similarly, the current study has been conducted in a cross-sectional and self-rated manner; therefore, there are chances of self-report bias in the collection of data. Hence, in future studies, researchers can examine the relationship of ecological value, economic value, health value, and safety value on the green product buying attitude and green product purchase behavior by using other research methodologies such as experimental designs.

Finally, the framework for this study is explored in the context of China and in particular the green product consumers from the two biggest cities (Beijing and Shanghai) have participated in the online survey. Therefore, in order to enhance the generalizability of the study, we need further studies to explore this framework in other contexts and other countries.


Funding: This research received no external funding.

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

Ecological Value
1. I consider the possibility of recycling of green products.
2. I consider ingredients harmful to the environment.
3. I consider whether it is an eco-friendly product.

Health Value
1. I consider whether it is a green product that improves my health.
2. I consider the health functionality of green products.
3. I consider health-friendly green products first.

Safety Value
1. I check the origin of the green product.
2. I look at the production process of green products.
3. I consider the safety of the human body.

Economic Value
1. I consider the efficacy of green products.
2. I consider the economic value of green products.
3. I consider the quality of green products.

The Role of the Government
1. I think the Chinese government continues to promote the seriousness of environmental problems.
2. I think the Chinese government continues to encourage the use of green products.

Media Exposure
1. I think the Chinese media continues to promote the seriousness of environmental problems.
2. I think the Chinese press continues to encourage the use of green products.

Buying Attitude
1. Buying green product is wise.
2. Buying green product is extremely good.
3. Buying green product is pleasant.

Purchase Behavior
1. I buy green products even if they are more expensive than the non-green ones.
2. I buy green products that have been objectively tested and certified by an accredited organization.
3. I buy green products from a company that transparently discloses its manufacturing environment.

References


74. Fornell, C.; Larcker, D.F. Structural equation models with unobservable variables and measurement error: Algebra and statistics. *J. Mark. Res.* **1981**, *18*, 382–388. [CrossRef]

