sustainability

MDPI

Article

The Impact of IoT Characteristics, Cultural Factors and Safety Concerns on Consumer Purchase Intention of Green Electronic Products

Hoshiar Mal [1,*] and Nagendra Singh Nehra [2]

[1] Department of Operations and Analytics, FLAME University, Pune 412115, India
[2] Department of Humanities and Management, Dr. B. R. Ambedkar National Institute of Technology Jalandhar, Jalandhar 144027, India; nehrans@nitj.ac.in
* Correspondence: hoshiar@flame.edu.in

Abstract: This study examines the impact of IoT characteristics, key cultural dimensions, and safety concerns on consumer green purchase intentions. The research employed a survey approach, collecting responses from 278 consumers. Structural equation modeling (SEM) was used to test the hypotheses. The finding of the study indicates that IoT characteristics (IoTC), environmental concerns (EC), collectivism (GW), and individualism (ID) have a positive effect with attitude toward green purchasing (AGP), which further affect green purchase intentions (GPI). Attitude toward green purchasing (AGP) mediates the relationship between IoTC, safety concerns (SC), collectivism (GW), individualism (ID), and green purchase intentions (GPI). The study's findings help us understand how IoTC, social concerns, and cultural factors affect consumer green purchase intention.

Keywords: IoT characteristics; cultural factors; safety concerns; green electronic products; green purchase

check for updates

Citation: Mal, H.; Nehra, N.S. The Impact of IoT Characteristics, Cultural Factors and Safety Concerns on Consumer Purchase Intention of Green Electronic Products. *Sustainability* **2023**, *15*, 6597. https://doi.org/10.3390/su15086597

Academic Editor: Diego Monferrer

Received: 17 February 2023
Revised: 26 March 2023
Accepted: 28 March 2023
Published: 13 April 2023

Copyright: © 2023 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (https://creativecommons.org/licenses/by/4.0/).

1. Introduction

The interplay of climate change, global population growth, and the consequent depletion of resources have led to significant environmental damage. Irresponsible industrial practices and unplanned consumption have been held responsible for global warming and other environmental problems resulting in ecological destabilization [1]. To reduce the adverse effects of overconsumption, there is an urgent need to change the current production and consumption patterns. Businesses can enhance sustainability by enhancing operational effectiveness or offering eco-friendly goods and procedures [2,3].

Environmental stress caused by anthropological activities is hazardous to the ecological balance. This type of behavior needs to be minimized to curtail the resultant damage. To this end, adopting sustainable consumption is imperative for improved ecological stability [4]. The growing importance of green consumption has ignited interest in research and development for transitioning society from post-carbon to sustainable. The prior work on green consumption emphasizes the factors affecting individual consumer attitudes and intentions [5]. Various theories and methods have been used to analyze green purchasing attitudes and behavior [6].

The public and private sectors worldwide are becoming increasingly concerned with the issue of ecological damage [7]. To mitigate the threat, the institutional stakeholders must classify the antecedents of green purchase intentions. This necessity has prompted previous scholars to investigate factors such as social standards, perceived behavioral control, and habits [8] that affect green purchase attitudes and intentions.

The antecedent of green purchase attitude and intention is described through socio-cultural aspects incorporating the interactions of individualism and collectivism into the

behavioral analysis [9]. Information technology has always emphasized the value of various products [10]. However, different IoTC has significantly influenced green electronic products [11]. Most IoTC enhance electronic products' functional value and reduce environmental effects [11]. In this context, examining the impact of IoTC on consumer green purchase intentions of electronic products is critical. Additionally, despite extensive research on green consumption, there needs to be more literature regarding the cultural construct of collectivism and individualism on green purchase attitudes and intentions [12].

This premise would propound the direct effect of IoTC and cultural factors on green consumption and is an essential preposition for the model [9]. Based on this, the study's primary objective is to empirically examine whether IoTC and cultural dimensions (individualism and collectivism) impact the green purchase intention of electronic products.

Further, some studies have demonstrated the effect of safety concerns (prevention) on green consumption intention [9,13,14]. This research explores the boundary conditions of the consumer's behavioral intention in light of green consumption behavior. To analyze the problem further, attitudes toward green purchasing are tested as the mediator in the relationship between IoTC, individualism, collectivism, safety concerns, and green purchase intention. The analysis of the mediation is the second objective of the study.

This research contributes to the literature in several ways. Firstly, it emphasizes IoTC's influence on green electronic product purchases. It further studies the mediation effect of attitudes toward green purchasing in the relationship between social concern, IoTC, collectivism, individualism, and green purchase intention. The research revealed boundary conditions facilitating consumers to adopt green consumption practices.

In India, studies related to green consumption intention are scarce. Most studies have been done on attitudes, which are environmental attitudes and attitudes toward purchasing [15,16]. The highlighted scarcity of research motivates the authors to identify the key elements affecting green electronic purchase intention. Additionally, the accelerating environmental damage fuels the need to produce and consume green products [15], which is the motivation for the present study.

Young respondents were chosen because of their demographic significance in society and the cultural ethos [17]. They are instrumental in affecting change through their influence as reference groups [17]. Furthermore, they can comprehend sustainable practices and augment cultural and technological adoption [18]. Therefore, this segment can spearhead the desired change in society effectively. The acknowledgment of the predictors of behavioral intention will contribute toward fulfilling the attitude–behavior gap around sustainable consumption behavior [19].

(I). What are the essential cultural factors influencing green purchasing?
(II). How do IoT characteristics impact green consumption behavior?

The article is arranged in the following order. The concept for developing hypotheses is presented in the section that follows. The study's methodology focused on testing and empirically validating the premise. The final portion discusses the study's shortcomings, theoretical and practical implications, and potential directions for further investigation.

2. Theoretical Background and Hypotheses

2.1. Conceptual Model

The proposed conceptual model of the present study (Figure 1) first asserts how consumer IoTC, safety concerns, and cultural factors are positively linked to attitudes toward green purchasing. The model also suggests that AGP mediates safety concerns, collectivism-individualism, IoTC, environmental concerns, and green purchase intentions.

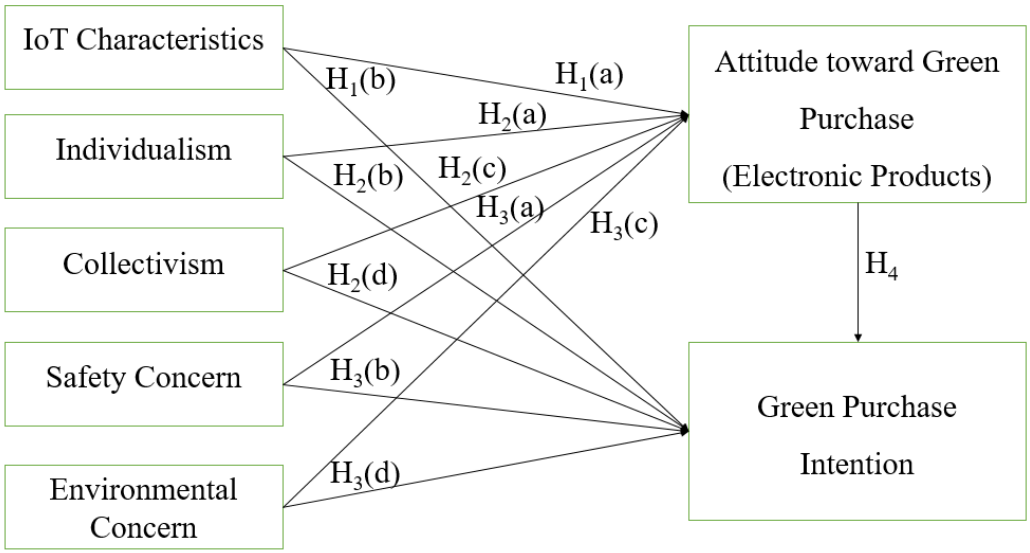

Figure 1. Proposed conceptual model.

2.2. IoT Characteristics and Green Purchase Intention

An IoT product uses IoT technology and differs from other products in several ways [7]. IoTC can be explained as IoT technology-based consumer product features that can link to the Internet and be identified, monitored, and controlled online [7,20]. IoTC encourages customers' perceptions and feelings due to their interactions with product components [7]. The viewpoints on the experience of acquiring and processing information are highlighted by the cognitive component [20,21]. The emotional dimension includes concerns and emotions brought on by interactions with external environmental stimuli [21]. The qualities of IoT products will influence consumers' perceptions, including their subjective emotions (emotional experience) and objective cognition (functional experience), which will affect consumers' attitudes and intentions toward these products [21]. IoT items have increased the range of consumer–object interaction, which encourages consumers to purchase these products. Thus, we proposed the following hypotheses:

H1(a). *IoT characteristics will impact consumers' attitudes toward green purchasing.*

H1(b). *IoT characteristics positively impact green purchase intention toward electronic products.*

2.3. Individualism/Collectivism/Attitude toward Green Purchasing and Green Purchase Intention

The individualism-collectivism dimension of [22] contrasts the values of independence and interdependence. Individualism, for instance, is linked to individual issues like self-enhancement, but openness and collectivism are linked to matters connected to community concerns like conservation [12]. In a broader sense, individual societies value autonomy and emotional independence, whereas collective societies prioritize emotional dependency, duty, and obligation [12]. The impact of individualism versus collectivism on attitudes toward green purchasing and green purchase intention is investigated by sustainability research [23]. Despite the evidence, there is still doubt about the unambiguous nature of Indian collectivism. In the famous study by [22], India scored 48 out of a possible 100, favoring collectivism. According to [24], individualism received the most significant frequency of responses in four cases, whereas collectivism received the most votes in just one. The collectivism and individualism scores of young and old, rural and urban, and less and more educated people were contrasted [25]. Various studies have reported a mixed relationship between individualism-collectivism and attitude toward green purchasing (AGP). Further research is required to explore these issues and fill the void, and thus, this study proposes:

H2(a). *Individualism has a positive impact on attitude toward green purchasing.*

H2(b). *Individualism positively impacts green purchase intention toward electronic products.*

H2(c). *Collectivism has a positive effect on attitude toward green purchasing.*

H2(d). *Collectivism positively impacts green purchase intention toward electronic products.*

2.4. Safety Concerns and Intention

Regulatory focus theory [26] suggests a different motivational system to attain desired goals. According to [27], avoidance-focused consumers are cautious and have safety worries. These people try to engage in risk-free activities. The authors of [28] assert that customers' aspirations for sustainable consumption increase when they feel secure. A protecting-avoidance strategy is often preferred by those who prioritize safety [29,30]. The authors of [31] looked into how consumer purchasing intentions for new products are affected by safety concerns. Their research looked at how consumer intentions to purchase novel products alter depending on their level of safety concerns. Highly safety-conscious consumers think a higher risk is involved in ingesting a novel or innovative product. Thus, the proposed hypotheses are:

H3(a). *The safety concern has a positive impact on attitude toward green purchasing.*

H3(b). *The safety concern positively impacts green purchase intention toward electronic products.*

2.5. Environmental Concern

Previous studies have shown that buyers who care about nature tend to buy eco-friendly products [2]. The authors of [15] also found that consumers aware of environmental issues live environmentally conscious lives. Additionally, customers inclined to act sustainably are more likely to purchase eco-friendly clothing [15]. The correlation between environmental concerns and responses to green clothing advertisements was positively confirmed by [2].

The desire to protect the environment and a commitment to nature is demonstrated by concern for the environment [15,32]. Consumers' environmental awareness fosters a supportive attitude toward environmental protection and promotes eco-friendly purchasing practices [32]. Individuals with strong environmental concerns are more motivated to support the government or corporate green initiatives and care more about environmental issues. Therefore, a favorable attitude toward green practices would result in a more serious environmental concern [15]. We used environmental concern as a forerunner to establish the considerable positive link between environmental concern and attitude toward ecological parks. The authors of [4] also found a favorable relationship between environmental concern and attitude toward ecological behavior. Based on the discussion above, we hypothesize:

H3(c). *Environmental concerns will positively affect consumers' attitudes toward green purchasing.*

H3(d). *Environmental concerns will positively affect consumers' green purchase intention toward electronic products.*

2.6. Attitude and Green Purchase Intention

Attitude refers to a specific behavior's comparative evaluation (positive/negative) [33]. Attitude results from behavioral belief and outcome evaluation and refers to a favorable and unfavorable judgment of a particular behavior [33,34]. A contrasting result was found while evaluating environmental attitudes and behaviors [18]. Various studies on environmental behavior reveal that people with favorable attitudes are more likely to be involved in ecologically accountable behavior [18].

Additionally, prior research has indicated a favorable correlation between attitude and purchase intention [35,36]. However, numerous studies have noted a weak correlation between mindset and environmentally friendly consumption patterns [37,38]. As a result, there is a complex relationship between customer attitudes and behaviors. More research is

needed to understand how attitudes and behaviors [39] toward environmentally friendly electronic items are related. This study aims to close this knowledge gap and makes the following hypothesis:

H4. *Attitude toward green purchasing positively impacts green purchase intention toward electronic products.*

2.7. Attitude toward Green Purchasing (AGP) as the Mediator

Cultural values positively affect consumers' attitudes toward green purchasing (AGP) and reciprocate into sustainable consumption behavior [2,18,40]. In a study on the impact of emotions in a cultural setting, the authors of [41] discovered that a person's cultural background impacts their emotions. The authors of [42,43] also analyzed sample data from America and Korea and found that cultures with strong collectivism are likelier to follow the rules. Cultural values influence consumer attitudes toward green buying, further impacting green purchase intention [32]. Thus, IoTC, individualism, and collectivism can shape consumers' attitudes and purchase intentions.

Therefore, the proposed hypotheses are:

H5(a). *Attitude toward green purchasing mediates the relationship between IoT characteristics and green purchase intention.*

H5(b). *Attitude toward green purchasing mediates the relationship between safety concerns and green purchase intention.*

H5(c). *Attitude toward green purchasing mediates the relationship between environmental concerns and green purchase intention.*

H5(d). *Attitude toward green purchasing mediates the relationship between individualism and green purchase intention.*

H5(e). *Attitude toward green purchasing mediates the relationship between collectivism and green purchase intention.*

3. Methodology

3.1. Instruments

This study tests the above-proposed hypotheses by collecting data through questionnaires. The items of the scale were adopted from prior studies. Among them, items developed by [7,18,44,45] are the basis for measuring the constructs. A five-point Likert scale measures every item of each construct. (1 = 'strongly disagree' and 5 = 'strongly agree'). The questionnaire was distributed to 15 consumers to analyze and understand whether consumers understood the intended meaning of the questions. Based on the qualitative feedback from the respondents the wording of some of the questions was modified. The questionnaire is divided into two parts. Part one dealt with basic information about the respondent's gender and age, and the second dealt with measuring the model variables.

3.2. Sampling Frame

The present research was conducted in India, a growing market in the Asia-Pacific region. In recent scenarios, India's hazardous threats have come from unsustainable behavior. The study was conducted in major cities of India, including Delhi, Pune, Lucknow, Allahabad, and Ahmadabad. These areas were chosen since most residents moved there for employment or study. Because of the vast number of residents across India, these areas have primarily multicultural populations. As a result, they serve as a miniature representation of Indian society and are appropriate for the present study.

The questionnaire was distributed offline—the research team visited several malls and other public places to conduct the polls. Participants who expressed an interest in responding to the surveys received questionnaires, and those individuals were instructed to complete the surveys immediately. The survey instruments were collected immediately

after they were completed. India is facing tremendous challenges in terms of sustainability and consumption patterns. India is also trying to achieve sustainable consumption while implementing the single-use plastic ban. A total of 350 samples were collected. After removing the data with missing values, 278 usable samples were obtained for the study. The demographic profile of the respondents is given in Table 1.

Table 1. Demographic profile of respondents.

Gender	Male 150 (53.96%)	Female 128 (46.04%)	Prefer Not to Say –
Age (in years)	18–20 Years 41 (14.75%)	21–25 Years 141 (50.72%)	26–30 Years 96 (34.53%)

3.3. Method

The PLS-SEM method was employed to assess the model. PLS-SEM is used for a prediction-oriented modeling of a target construct as the main emphasis [46]. Further, the constructs in the present study are reflective [47], and the PLS-SEM works well for reflective models. The major goal of the PLS-SEM is to test the framework for predictive purposes in circumstances where the underlying model is quite complex [48].

Confirmatory research aims to comprehend the causal relationship between theoretical conceptions of interest by gathering empirical data to explain the working mechanism. Confirmatory and exploratory factor analysis are frequently combined by putting the measurement model to the test and concentrating on elucidating the construct in the structural model. PLS-SEM is an appropriate method for analyzing the mediation technique when creating complex models. For the model estimation, SMARTPLS 4 software was used. Significance testing was applied in bootstrapping procedure with 5000 samples.

4. Results

4.1. Measurement Model

Cronbach's alpha (CA) and composite reliability (CR) were evaluated to determine the internal consistency reliability. Indicators with stronger correlations tend to be constructed with more internal consistency. All of the constructs in Table 2 had CA and CR values higher than the recommended value of 0.70, demonstrating internal consistency. According to [49], the outer loading must be more than 0.70, and the average variance extracted (AVE) must be greater than 0.50 to establish convergent validity. All of the constructions' AVE values fall between 0.641 and 0.953. As a result, convergent validity is supported by sufficient evidence for all constructs [49].

Discriminant validity was evaluated employing Fornell-Larcker criteria. As per the criteria, the square root of AVE should be larger than the inter-construct correlation [50]. Discriminant validity is not a concern for the present study (Table 3). Further, the Heterotrait-Monotrait ratio (Table 4) is below 0.850, which justifies the discriminant validity [51].

4.2. Structural Model

The variance inflation factor (VIF) values were lower than the recommended threshold value of 5, showing no multicollinearity issue [49]. The standard root means square error (SRMR) value is lower than the threshold limit of 0.80, indicating a reasonable model fit [49].

With 5000 subsamples, the bootstrapping technique evaluated the importance of each path's coefficient proposed in the study model [49]. The results in Table 5 showed that IoTC has a favorable impact on AGP; hence H1(a) is supported. Similarly, environmental concern, collectivism, and individualism have a positive effect on AGP, but safety concern does not have any significant impact on AGP. Similarly, IoTC, individualism, safety concerns, environmental concern has a positive effect on GPI but collectivism does not have any significant impact on GPI. AGP has a positive effect on GPI.

Table 2. Measurement model.

Construct	Item	Outer Loading	Cronbach's Alpha	Composite Reliability	AVE
IoT Characteristics	IoTC1	0.965	0.973	0.980	0.924
	IoTC2	0.970			
	IoTC3	0.946			
	IoTC4	0.963			
Safety Concern	SC1	0.977	0.951	0.976	0.953
	SC2	0.976			
Environmental Concern	EC1	0.950	0.942	0.959	0.854
	EC2	0.956			
	EC3	0.951			
	EC4	0.835			
Individualism	ID1	0.853	0.785	0.862	0.614
	ID2	0.849			
	ID3	0.786			
	ID4	0.623			
Collectivism	GW1	0.900	0.882	0.826	0.807
	GW2	0.883			
	GW3	0.911			
Attitude toward Green Purchasing	AGP1	0.924	0.893	0.934	0.825
	AGP2	0.942			
	AGP3	0.857			
Green purchase Intention toward Electronic Products.	GPI1	0.969	0.949	0.967	0.908
	GPI2	0.959			
	GPI3	0.931			

Table 3. Fornell-Larcker criterion (discriminant validity).

	1	2	3	4	5	6	7
Attitude toward Green Purchasing	0.908						
Environmental Concern	0.178	0.924					
Green Purchase Intention	0.347	−0.238	0.953				
IoT Characteristics	0.224	−0.145	0.479	0.961			
Collectivism	0.128	0.023	0.151	−0.242	0.898		
Safety Concern	0.064	0.394	0.301	−0.298	0.218	0.976	
Individualism	0.304	0.157	0.131	0.113	0.258	0.171	0.783

Note: Values on the diagonal represent the square root of AVE, while the off-diagonal are correlations.

Table 4. HTMT criteria (discriminant validity).

	1	2	3	4	5	6	7
Attitude toward Green Purchasing							
Environmental Concern	0.206						
Green Purchase Intention	0.374	0.256					
IoT Characteristics	0.238	0.154	0.498				
Collectivism	0.145	0.067	0.161	0.254			
Safety Concern	0.082	0.414	0.317	0.309	0.233		
Individualism	0.354	0.178	0.149	0.124	0.314	0.199	

The mediation effect is tested using bootstrapping, as suggested by [52]. Based on Table 5, the result demonstrates that the relationship between collectivism and green purchase intention was fully mediated by attitude toward green purchasing (AGP). In contrast, attitude toward green purchasing (AGP) partially mediates the relationship between environmental concern, individualism, IoTC, and green purchase intention.

Analysis of the coefficient of determination (R^2) value of the endogenous constructs was used to determine the model's predictive power and the significance of the route

coefficient [49]. The model predicted 26.50% of green purchase intentions and 13.70% of attitudes toward green purchasing (AGP). To obtain the Stone-Geisser Q^2 value, the PLS-predict procedure was used [49]. Referring to Table 6, the result indicated that the Q^2 values for AGP (0.137) and GPI (0.265) were more than zero, indicating that the PLS-SEM result's prediction error was less severe than that of the mean value.

Table 5. Structural Model.

	Direct Effect	**Beta**	**Standard Error**	**t-Value**	***p*-Value**	**Decision**
H1(a)	IoTC → AGP	0.259	0.045	5.709	0.000	Supported
H1(b)	IoTC → GPI	0.383	0.057	6.711	0.000	Supported
H2(a)	ID → AGP	0.211	0.057	3.716	0.000	Supported
H2(b)	ID → GPI	0.151	0.059	2.583	0.010	Supported
H2(c)	GW → AGP	0.131	0.053	2.452	0.014	Supported
H2(d)	GW → GPI	−0.064	0.059	1.083	0.279	Not Supported
H3(a)	SC → AGP	0.007	0.049	0.145	0.885	Not Supported
H3(b)	SC → GPI	−0.14	0.053	2.648	0.008	Supported
H3(c)	EC → AGP	0.176	0.05	3.547	0.000	Supported
H3(d)	EC → GPI	−0.15	0.045	3.362	0.001	Supported
H4	AGP → GPI	0.312	0.041	7.569	0.000	Supported
	Indirect Effect	Beta	Standard Error	t-value	*p*-value	Decision
H5(a)	IoTC → AGP → GPI	0.081	0.019	4.255	0.000	Supported (Complementary Partial Mediation)
H5(b)	SC → AGP → GPI	0.002	0.016	0.144	0.885	Not Supported
H5(c)	EC → AGP → GPI	0.055	0.018	3.095	0.002	Supported (Complementary Partial Mediation)
H5(d)	ID → AGP → GPI	0.066	0.019	3.422	0.001	Supported (Complementary Partial Mediation)
H5(e)	GW → AGP → GPI	0.041	0.018	2.242	0.025	Supported (Full Mediation)

Table 6. PLS-predict assessment.

Construct Prediction Summary									
						Q^2			
Attitude toward Green Purchasing (AGP)						**0.137**			
Green Purchase Intention (GPI)						**0.265**			
	PLS-RMSE	**MAE**	**Q^2 Predict 10 Folding**	**LM-RMSE**	**MSE**	**Q^2 Predict 11 Folding**	**PLS-LM PMSE**	**MAE**	**Q^2 Predict Difference**
AGP1	1.149	0.904	0.091	1.143	0.889	0.097	1.143	0.889	−0.006
AGP2	1.110	0.824	0.113	1.115	0.824	0.118	1.115	0.824	−0.005
AGP3	1.095	0.876	0.134	1.128	0.885	0.140	1.128	0.885	−0.006
GPI1	1.288	1.074	0.251	1.333	1.114	0.248	1.333	1.114	0.003
GPI2	1.154	0.949	0.261	1.197	0.979	0.261	1.197	0.979	0.000
GPI3	1.328	1.100	0.209	1.361	1.135	0.208	1.361	1.135	0.001

5. Discussion

IoTC has a significant impact on attitude toward green purchasing. Green electronics product companies should focus on marketing strategies to build a favorable atmosphere and highlight the IoTC of their products. This is in line with prior research [8,53]. IoTC does affect green purchase intention directly [54]. However, the presence of IoTC can shape consumers' green purchasing attitudes, which may further impact their green purchase intention.

Individualism [55,56] positively impacts attitudes toward green purchasing and green purchase intention. Collectivism positively impacts attitude toward green purchasing but not green purchase intention. This result aligns with [57], indicating a consumer sense of responsibility and moral reasoning in purchasing green products. The positive impact of

collectivism can also be attributed to Indian culture, which is generally collectivistic in nature. Individuals who live in collectivist societies will sacrifice their individual goals for group goals and, hence, will try to make decisions that society approves of [58]. They are more likely to practice green purchasing because they are more cooperative, more eager to lend a hand, and place more value on community aims than on individual ones [59]. Governments and marketers need to focus on instilling collectivistic beliefs in individualistic groups so that purchase intentions for green products can be increased among these groups.

Safety concerns do not relate to attitudes toward green purchasing (AGP) but significantly affect green purchase intention (GPI). These results support prior studies [60]. These results can be attributed to consumers being more focused on security and safety; thus, they are more likely to purchase green products in an uncertain environment.

Attitude toward green purchasing positively impacts green purchase intention, as consumers with a favorable attitude toward green purchasing will use green products [30]. It supports the outcome of the prior studies [18]. Further, attitude toward green purchasing (AGP) acts as a mediator in the relationship between collectivism [61] and green purchase intention (full mediation). Attitude toward green purchasing also has a partial mediation (complementary partial mediation) in the interlinkage of individualism, IoTC, and environmental concerns, with green purchase intention, respectively. However, the direct relation of collectivism with green purchase intention is not significant enough.

6. Conclusions, Implications, and Limitations

The present research contributes to green consumption research by highlighting the impact of IoTC on green purchase intention. Further, the present study fills the literature gap and highlights the relationship between safety concerns, individualism, collectivism, and green purchasing. The verified model is beneficial in predicting consumer green purchase intention. The results emphasize collectivism as a major cultural factor affecting consumers' purchase intention of green electronic products. Further, it highlights that IoTC affect consumer attitudes toward green electronic products, further impacting their green purchase intention.

The research has several managerial implications for public policymakers and managers in organizations. Firstly, IoTC must be highlighted in green electronic products as they can shape consumers' favorable evaluations of the products. Further, managers and policymakers should consider green purchase intention and attitudes toward green purchasing. Cultural factors can affect consumer attitude and intention; therefore, these factors need to be considered while shaping marketing campaigns/strategies. Regarding green electronic products, managers should also tackle consumers' safety and environmental concerns to regulate attitudes and intentions. Suitable awareness programs can be developed to tackle the environmental and safety concerns of the customers. The present study has demonstrated that the suggested research strategy is helpful and thorough in elucidating attitudes and purchasing intentions toward environmentally friendly electronic products. The study aims to create a new model using previously verified components in other studies that have not been merged into a single model.

Several variables can impact the intention to make green purchases, including IoTC and social concerns. In line with our concept, a mediator that affects the intention to make green purchases is an attitude toward doing so. Mainly, it was found that those with security concerns about green electronic products will buy the product in the future. Besides IoTC, collectivism and individualism positively impact attitudes toward green purchasing, which further influences green purchase intention. Attitude toward green purchasing mediates the empirically tested model. The study is limited to investigating young consumers using green electronic products.

Furthermore, the study uses cross-sectional data; hence, the researchers could use longitudinal data to investigate the same construct further. Additionally, the study considers self-reported information; future research may use other means of data collection. The present study's findings are limited to young consumers; future researchers may also

explore other age groups. Future studies might also consider variables excluded in the present study.

Author Contributions: Conceptualization, formal analysis, funding acquisition, investigation, methodology, writing—original draft, writing—review and editing—H.M. Conceptualization, data curation, investigation, writing—original draft, writing—review and editing—N.S.N. All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded by FLAME University, Pune, and FLAME University, Pune, funded the APC.

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: Data and Survey Instruments will be made available on request.

Acknowledgments: We thank Yatish Joshi and Abhishek Tripathi, Motilal Nehru National Institute of Technology Allahabad, for all the help and assistance for the execution of the paper.

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

References

1. Backhaus, J.; Breukers, S.; Mont, O.; Paukovic, M.; Mourik, R. Sustainable Lifestyles. Today's Facts and Tomorrow's Trends. D1. 1 Sustainable Lifestyles Baseline Report. 2012. Available online: https://www.sustainable-lifestyles.eu/fileadmin/images/content/D1.1_Baseline_Report.pdf (accessed on 16 February 2023).
2. Karim, A.E.; Albitar, K.; Elmarzouky, M. A novel measure of corporate carbon emission disclosure, the effect of capital expenditures and corporate governance. *J. Environ. Manag.* **2021**, *290*, 112581. [CrossRef]
3. Rajani, R.L.; Heggde, G.S.; Kumar, R.; Chauhan, P. Demand management strategies role in sustainability of service industry and impacts performance of company: Using SEM approach. *J. Clean. Prod.* **2022**, *369*, 133311. [CrossRef]
4. Nath, V.; Kumar, R.; Agrawal, R.; Gautam, A.; Sharma, V. Consumer adoption of green products: Modeling the enablers. *Glob. Bus. Rev.* **2013**, *14*, 453–470. [CrossRef]
5. Young, W.; Hwang, K.; McDonald, S.; Oates, C.J. Sustainable consumption: Green consumer behaviour when purchasing products. *Sustain. Dev.* **2010**, *18*, 20–31. [CrossRef]
6. Wang, P.; Liu, Q.; Qi, Y. Factors influencing sustainable consumption behaviors: A survey of the rural residents in China. *J. Clean. Prod.* **2014**, *63*, 152–165. [CrossRef]
7. Chang, Y.; Dong, X.; Sun, W. Influence of characteristics of the Internet of Things on consumer purchase intention. *Soc. Behav. Personal. Int. J.* **2014**, *42*, 321–330. [CrossRef]
8. Aboelmaged, M. E-waste recycling behaviour: An integration of recycling habits into the theory of planned behaviour. *J. Clean. Prod.* **2021**, *278*, 124182. [CrossRef]
9. Ianole-Călin, R.; Francioni, B.; Masili, G.; Druică, E.; Goschin, Z. A cross-cultural analysis of how Individualism and collectivism impact collaborative consumption. *Resour. Conserv. Recycl.* **2020**, *157*, 104762. [CrossRef]
10. Kolsi, M.C.; Al-Hiyari, A.; Hussainey, K. Does environmental, social, and governance performance mitigate earnings management practices? Evidence from US commercial banks. *Environ. Sci. Pollut. Res.* **2022**, *30*, 1–16. [CrossRef]
11. Blankenberg, A.K.; Alhusen, H. *On the Determinants of Pro-Environmental Behavior: A Guide for Further Investigations (No. 350)*; CEGE Discussion Papers; CEGE: London, UK, 2018.
12. Sreen, N.; Purbey, S.; Sadarangani, P. Impact of culture, behavior and gender on green purchase intention. *J. Retail. Consum. Serv.* **2018**, *41*, 177–189. [CrossRef]
13. Coelho, F.; Cruz, L.; Pereira, M.C.; Simões, P.; Barata, E. How regulatory focus shapes pro-environmental behaviour: Evidence from Portugal. *J. Mark. Manag.* **2022**, 1–26. [CrossRef]
14. Rahman, S.U. Differences in horizontally individualist and vertically collectivist consumers' environmental behaviour: A regulatory focus perspective. *Int. J. Bus. Emerg. Mark.* **2019**, *11*, 73–88. [CrossRef]
15. Joshi, Y.; Rahman, Z. Factors affecting green purchase behaviour and future research directions. *Int. Strateg. Manag. Rev.* **2015**, *3*, 128–143. [CrossRef]
16. Siyal, S.; Ahmed, M.J.; Ahmad, R.; Khan, B.S.; Xin, C. Factors Influencing Green Purchase Intention: Moderating Role of Green Brand Knowledge. *Int. J. Environ. Res. Public Health* **2021**, *18*, 10762. [CrossRef]
17. Yadav, R.; Pathak, G.S. Young consumers' intention towards buying green products in a developing nation: Extending the theory of planned behavior. *J. Clean. Prod.* **2016**, *135*, 732–739. [CrossRef]
18. Joshi, Y.; Rahman, Z. Predictors of young consumer's green purchase behaviour. *Manag. Environ. Qual. Int. J.* **2016**, *27*, 452–472. [CrossRef]
19. Moslehpour, M.; Chaiyapruk, P.; Faez, S.; Wong, W.-K. Generation Y's Sustainable Purchasing Intention of Green Personal Care Products. *Sustainability* **2021**, *13*, 13385. [CrossRef]

20. Dong, X.; Chang, Y.; Wang, Y.; Yan, J. Understanding usage of Internet of Things (IOT) systems in China: Cognitive experience and affect experience as moderator. *Inf. Technol. People* **2017**, *30*, 117–138. [CrossRef]
21. Pinochet LH, C.; Lopes, E.L.; Srulzon CH, F.; Onusic, L.M. The influence of the attributes of "Internet of Things" products on functional and emotional experiences of purchase intention. *Innov. Manag. Rev.* **2018**, *15*, 303–320. [CrossRef]
22. Hofstede, G. Motivation, leadership, and organization: Do American theories apply abroad? *Organ. Dyn.* **1980**, *9*, 42–63. [CrossRef]
23. Ur Rahman, S.; Chwialkowska, A.; Hussain, N.; Bhatti, W.A.; Luomala, H. A cross-cultural perspective on sustainable consumption: Implications for consumer motivations and promotion. *Environ. Dev. Sustain.* **2023**, *25*, 997–1016. [CrossRef]
24. Sinha, D.; Tripathi, R.C. *Individualism in a Collectivist Culture: A Case of Coexistence of Opposites*; Sage Publications, Inc.: Newbury Park, CA, USA, 1994.
25. Mishra, R.C. *Individualist and Collectivist Orientations across Generations*; Sage Publications, Inc.: Newbury Park, CA, USA, 1994.
26. Higgins, E.T. Beyond pleasure and pain. *Am. Psychol.* **1997**, *52*, 1280. [CrossRef] [PubMed]
27. Arnold, M.J.; Reynolds, K.E. Affect and retail shopping behavior: Understanding the role of mood regulation and regulatory focus. *J. Retail.* **2009**, *85*, 308–320. [CrossRef]
28. Lo, A.Y. Negative income effect on perception of long-term environmental risk. *Ecol. Econ.* **2014**, *107*, 51–58. [CrossRef]
29. Higgins, E.T. Promotion and prevention: Regulatory focus as a motivational principle. In *Advances in Experimental Social Psychology*; Academic Press: Cambridge, MA, USA, 1998; Volume 30, pp. 1–46.
30. Wang, J.; Lee, A.Y. The role of regulatory focus in preference construction. *J. Mark. Res.* **2006**, *43*, 28–38. [CrossRef]
31. Herzenstein, M.; Posavac, S.S.; Brakus, J.J. Adoption of new and really new products: The effects of self-regulation systems and risk salience. *J. Mark. Res.* **2007**, *44*, 251–260. [CrossRef]
32. Chan, R.Y. Determinants of Chinese consumers' green purchase behavior. *Psychol. Mark.* **2001**, *18*, 389–413. [CrossRef]
33. Ajzen, I. From intentions to actions: A theory of planned behavior. In *Action Control*; Springer: Berlin/Heidelberg, Germany, 1985; pp. 11–39.
34. Azjen, I.; Fishbein, M. Understanding attitudes and predicting social behavior. Englewood Cliffs. 1980. Available online: https://searchworks.stanford.edu/view/808504 (accessed on 16 February 2023).
35. Halepete, J.; Littrell, M.; Park, J. Personalization of fair trade apparel: Consumer attitudes and intentions. *Cloth. Text. Res. J.* **2009**, *27*, 143–160. [CrossRef]
36. Hustvedt, G.; Bernard, J.C. Effects of social responsibility labelling and brand on willingness to pay for apparel. *Int. J. Consum. Stud.* **2010**, *34*, 619–626. [CrossRef]
37. Davis, J.J. The effects of message framing on response to environmental communications. *J. Mass Commun. Q.* **1995**, *72*, 285–299. [CrossRef]
38. Miniero, G.; Codini, A.; Bonera, M.; Corvi, E.; Bertoli, G. Being green: From attitude to actual consumption. *Int. J. Consum. Stud.* **2014**, *38*, 521–528. [CrossRef]
39. Wijekoon, R.; Sabri, M.F. Determinants That Influence Green Product Purchase Intention and Behavior: A Literature Review and Guiding Framework. *Sustainability* **2021**, *13*, 6219. [CrossRef]
40. Stern, P.C.; Dietz, T.; Abel, T.; Guagnano, G.A.; Kalof, L. A value-belief-norm theory of support for social movements: The case of environmentalism. *Hum. Ecol. Rev.* **1999**, 81–97.
41. Onwezen, M.C.; Antonides, G.; Bartels, J. The Norm Activation Model: An exploration of the functions of anticipated pride and guilt in pro-environmental behaviour. *J. Econ. Psychol.* **2013**, *39*, 141–153. [CrossRef]
42. Chatterjee, S.; Sreen, N.; Sadarangani, P.H.; Gogoi, B.J. Impact of green consumption value, and context-specific reasons on green purchase intentions: A behavioral reasoning theory perspective. *J. Glob. Mark.* **2022**, *35*, 285–305. [CrossRef]
43. Cho, Y.N.; Thyroff, A.; Rapert, M.I.; Park, S.Y.; Lee, H.J. To be or not to be green: Exploring Individualism and collectivism as antecedents of environmental behavior. *J. Bus. Res.* **2013**, *66*, 1052–1059. [CrossRef]
44. Fellner, B.; Holler, M.; Kirchler, E.; Schabmann, A. Regulatory Focus Scale (RFS): Development of a scale to record dispositional regulatory focus. *Swiss J. Psychol.* **2007**, *66*, 109. [CrossRef]
45. Yadav, R.; Pathak, G.S. Determinants of consumers' green purchase behavior in a developing nation: Applying and extending the theory of planned behavior. *Ecol. Econ.* **2017**, *134*, 114–122. [CrossRef]
46. Henseler, J.; Hubona, G.; Ray, P.A. Using PLS path modeling in new technology research: Updated guidelines. In *Industrial Management & Data Systems*; Emerald Group Publishing Limited: Bingley, UK, 2016.
47. Pop, R.A.; Săplăcan, Z.; Alt, M.A. Social media goes green—The impact of social media on green cosmetics purchase motivation and intention. *Information* **2020**, *11*, 447. [CrossRef]
48. Hair, J.F.; Risher, J.J.; Sarstedt, M.; Ringle, C.M. When to use and how to report the results of PLS-SEM. *Eur. Bus. Rev.* **2019**, *31*, 2–24. [CrossRef]
49. Hair, J.F., Jr.; Hult, G.T.M.; Ringle, C.M.; Sarstedt, M. *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*; Sage Publications: Newbury Park, CA, USA, 2021.
50. Richter, N.F.; Cepeda-Carrion, G.; Roldán Salgueiro, J.L.; Ringle, C.M. European management research using partial least squares structural equation modeling (PLS-SEM). *Eur. Manag. J.* **2016**, *34*, 589–597. [CrossRef]
51. Henseler, J.; Ringle, C.M.; Sarstedt, M. A new criterion for assessing discriminant validity in variance-based structural equation modeling. *J. Acad. Mark. Sci.* **2015**, *43*, 115–135. [CrossRef]

52. Preacher, K.J.; Hayes, A.F. Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behav. Res. Methods* **2008**, *40*, 879–891. [CrossRef]
53. Alkaraan, F.; Albitar, K.; Hussainey, K.; Venkatesh, V.G. Corporate transformation toward Industry 4.0 and financial performance: The influence of environmental, social, and governance (ESG). *Technol. Forecast. Soc. Change* **2022**, *175*, 121423. [CrossRef]
54. Zhang, Y.; Bai, X.; Mills, F.P.; Pezzey, J.C. Examining the attitude-behavior gap in residential energy use: Empirical evidence from a large-scale survey in Beijing, China. *J. Clean. Prod.* **2021**, *295*, 126510. [CrossRef]
55. Hui, C.H. Measurement of individualism-collectivism. *J. Res. Personal.* **1988**, *22*, 17–36. [CrossRef]
56. Saracevic, S.; Schlegelmilch, B.B.; Wu, T. How normative appeals influence pro-environmental behavior: The role of Individualism and collectivism. *J. Clean. Prod.* **2022**, *344*, 131086. [CrossRef]
57. Lee, A.Y.; Higgins, E.T. The persuasive power of regulatory fit. In *Social Psychology of Consumer Behavior*; Psychology Press: London, UK, 2009; pp. 319–333.
58. Bray, J.; Johns, N.; Kilburn, D. An exploratory study into the factors impeding ethical consumption. *J. Bus. Ethics* **2011**, *98*, 597–608. [CrossRef]
59. Hussain, S.; Huang, J. The impact of cultural values on green purchase intentions through ecological awareness and perceived consumer effectiveness: An empirical investigation. *Front. Environ. Sci.* **2022**, *10*, 985200. [CrossRef]
60. Hu, P.; Bhuiyan, M.A.; Rahman, M.K.; Hossain, M.M.; Akter, S. Impact of COVID-19 pandemic on consumer behavioural intention to purchase green products. *PLoS ONE* **2022**, *17*, e0275541. [CrossRef]
61. Armitage, C.J.; Christian, J. From attitudes to behaviour: Basic and applied research on the theory of planned behaviour. *Curr. Psychol.* **2003**, *22*, 187–195. [CrossRef]

Disclaimer/Publisher's Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.