

Article

Environmentally Friendly Materialism: How It Is Generated and How Luxury Apparel Addresses Environmental Problems

Hiroyasu Furukawa ^{1,*} and Kyung-Tae Lee ² ¹ School of Business Administration, Meiji University, 1-1 Kanda-Surugadai, Chiyoda, Tokyo 101-8301, Japan² Department of Marketing and International Trade, Faculty of Commerce, Chuo University, Tokyo 192-0393, Japan; klee097@g.chuo-u.ac.jp

* Correspondence: furukawa@meiji.ac.jp; Tel.: +81-3-3296-2080

Abstract: The increasing number of consumers possessing a global mindset has led to the emergence of environmentally friendly materialist consumers who find pleasure in owning environmentally friendly brands and products. We examine why and how such consumers emerge by studying consumers of luxury apparel products, which actively promote environmentally conscious values on a global scale. Structural equation modeling and mediation analysis were conducted on consumers in China and Japan—two countries with high consumption of this product category and a contrasting awareness of environmental consciousness. Our findings revealed that the higher the global mindset of consumers, environmentally friendly materialism is enhanced by internal motives in countries with high environmental consciousness and by external motives in countries with low environmental consciousness. Our results have implications for mechanisms on how the conditions for the emergence of environmentally friendly materialism differ from country to country and marketing measures that respond to these differences.

Keywords: self-identification with global consumer culture; materialism; environmentally friendly consumption; extended self; costly signaling theory; self-determination theory



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1. Introduction

Protection of the global environment has long been demanded. Companies that have created a large burden on the natural environment have been struggling to cope with this challenge [1]. Companies are required to not only disclose information on their responses to the natural environment to shareholders, governments, and suppliers but also to consumers. In particular, the apparel industry has a massive environmental burden, and globally, consumers are paying attention to what they are dealing with [2,3]. Consumers, especially those who have an international perspective, are interested in the global situation and actively purchase products developed by multinational firms; thus, they are sensitive to the environmental efforts of firms [4]. Recently, there has been rapid spread and development of internet and social network services that encourage mutual communication between information senders and receivers. Consequently, there has been a proliferation of information dissemination worldwide and a rise in the number of consumers possessing a global mindset. This encompasses a range of factors, such as global environmental and social conditions, multinational corporations, and global brands [5]. Despite the presence of environmentally conscious materialism, why and how they emerge is still unclear [6,7]. Thus, companies are not only required to disseminate environmentally friendly information to consumers but also are faced with the problem of how to approach consumers about the sustainable aspects of their brands and products.

Luxury apparel developed by multinational companies is leading the apparel industry by clarifying each company's recognition and values regarding the natural environment and actively communicating their visions [6,8]. For example, Dior has used "Dream in

green” as its tagline for their branding and is developing products that strongly consider the conservation of natural resources and climate change. Similarly, Prada has developed a project called Re-Nylon, in which plastic waste collected from oceans is reused and cleaned to create new, beautiful products. Luxury apparel has been examined in conjunction with consumer materialism because of its conspicuousness [9,10]. Owning and showing off a brand or product is a status that increases consumers’ sense of wellbeing. Therefore, the luxury apparel market is ideal for discerning not only consumer materialism and environmentally conscious behaviors but also the presence of consumers who exhibit a harmonious combination of these attributes. Therefore, this study concentrates on the luxury apparel industry.

There are several limitations to existing studies on this issue. First, environmentally friendly materialism is assumed to be practiced to show others that one is environmentally friendly, but this point has not been clarified in the existing studies [7]. Environmentally friendly materialism denotes the inclination to attain success, joy, and happiness by actively seeking for and acquiring products that are environmentally conscious. Based on the costly signaling theory (CST), this study elucidates the phenomenon of how consumers with high materialism seek environmentally friendly luxury goods. CST explains why people sometimes engage in costly behavior, proposing that paying additional cost beyond what is necessary signals their competence or status to others [11,12]. Consumer research has applied this theory to the study of luxury consumption, which is more pronounced in individuals with high materialism [7,13–15]. We extend this research by applying it to the context of seeking environmentally friendly products. Indeed, eco-friendly products are often more expensive and sometimes have inferior quality compared with available products with comparable functionality [16]. However, purchasing eco-friendly products to benefit society, even when the cost is high and extra, signals that one is an altruistic person of high status. Thus, this study attempts to derive new findings by linking materialism and environmentally friendly luxury consumption through CST.

Second, it is not clear whether environmentally friendly materialism is pursued to satisfy personal internal needs or whether it is motivated by external needs such as conspicuousness. Based on the CST, it can be assumed that external motivation is involved in environmentally friendly materialism. However, based on the self-determination theory (SDT), which explains that an individual’s internal decision-making enhances his/her wellbeing, it is possible that environmentally conscious materialism is generated by internal and external motivation. Therefore, we examine the mechanisms and conditions under which environmentally friendly materialism occurs.

This study expands the existing research as follows: First, investigating the CST framework in detail, we clarify that one of the conditions for the emergence of environmentally friendly materialism is related to conspicuous consumption. We argue that consumers use environmentally conscious brands and products not only to contribute to the environment but also as a medium of self-expression for their own benefit. By clarifying this point, we provide concrete evidence to motivate consumers to position environmentally conscious behavior as a part of fashion.

Second, we clarify the pattern of occurrence of environmentally friendly materialism through international comparisons. It is assumed that the conditions for the generation of environmentally friendly materialism differ among countries with strong and weak environmental awareness [7]. This study conducts a consumer comparison of China and Japan, which have high rates of luxury apparel consumption and materialism but contrasting environmental consciousness. We contribute to the existing research by using the explanatory power of CST and SDT to explain that the generation process of environmentally friendly materialism varies from country to country. This study posits that a comprehensive understanding of the phenomenon of environmentally friendly materialism must consider the interplay between the two theoretical frameworks of CST and SDT. It is proposed that varying national contexts may elicit distinct tendencies that are prominently reflected in each of these theories.

Given these recent phenomena and research gaps, this study aims to investigate the emergence of environmentally friendly materialism in the context of luxury apparels that promote environmentally conscious values on a global scale by considering the frameworks of CST and SDT.

2. Theoretical Background of Environmentally Friendly Materialism

2.1. Global Minded Consumer

Consumer culture theories are useful in understanding how consumers respond to global brands [17]. People accumulate knowledge and change their behavior based on their cultural backgrounds [18]. This theoretical foundation suggests that people maintain their cultural identities in global, glocal, and local ways [19,20]. As information technology has developed in recent years, a consumer culture based on a global perspective has become more active. This degree is called self-identification with global consumer culture (IDT) [21]. As consumers become globalized, people will naturally look for products that are available globally [22]. It has also been demonstrated that global brands stimulate consumers' materialistic values. Materialism is referred to an aspiration toward happiness and success in life through the acquisition and possession of goods [23,24]. It is also viewed as the tendency of people to value social image [25,26]. Consumers who are interested in overseas markets and actively gather information explore global brands to fulfill and express their fame, success, wealth, and social status [25,26]. Thus, it is expected that as consumers become more globally minded, their materialistic tendencies would increase [27,28].

Consumers with high IDT form a potentially influential reference group [17]. They position themselves as members of a group that holds global values, and they seek to express themselves through the products they own [29,30]. Consumers with a global mindset tend to be sensitive to information, and they view products as a medium for influencing others [27]. Luxury brands benefit consumers who want to present themselves as influential people with social status and prestige [31]. This type of luxury value is described as the extended self, and this implies the conspicuous benefits of brand consumption [31]. By possessing and consuming the brand, consumers can express their identity to others. Thus, the increasing tendency of high IDT consumers may result not only in increasing materialism but also in extended self behavior.

In addition, the acculturation to a global consumer culture has begun to affect the purchasing behavior of environmentally conscious products [32]. For example, Grinstein and Riefler [33] found that the more people focus on the world, the more they increase their environmentally conscious behavior. Environmental issues are occurring on a global scale and are difficult to solve within a single country. Additionally, people expect multinational corporations to respond to these problems [34]. As people become more aware of global information, it is expected that they will develop a greater understanding and sympathy for the state of environmental destruction in the world. Particularly, globally minded consumers are sensitive to rapid changes in society, and consumers build their own identity by supporting the ecological world by acquiring environmentally friendly products [33]. As mentioned earlier, the active pursuit of environmentally friendly products plays a crucial role in defining environmentally friendly materialism. Therefore, we focused on environmental products seeking behavior (ESB), an important consumer behavior with respect to the acquisition and usage of environmentally friendly products and have treated it as a dependent variable.

Hypothesis 1a (H1a). *IDT has a positive effect on materialism.*

Hypothesis 1b (H1b). *IDT has a positive effect on extended self.*

Hypothesis 1c (H1c). *IDT has a positive effect on environmental products seeking behavior (ESB).*

Previous studies have investigated the relationship between materialism and environmentally friendly products, taking some mediators or moderators into account. In their survey in the U.S., Talukdar and Yu [7] revealed that materialism positively affects the purchase intention of sustainable luxury products via the perceived functional value, which captures the perceived superior quality of sustainable luxury goods. Strizhakova and Coulter [6] found that the global cultural identity moderates the positive impacts of materialism on four different types of environmentally friendly tendencies. In their study, a total of 1872 consumers from emerging (such as Brazil, Russia, India, and China) and developed countries (such as the U.S. and Australia) participated; they confirmed that as global cultural identity rises, the relationship between materialism and concern, willingness to pay more, engagement for, and perception of global companies that develop environmentally friendly products increase. However, the mechanism behind this relationship remains unclear and requires further elucidation. These studies suggest that consumers with materialistic values may be more optimistic about purchasing environmentally friendly products. They can perceive environmentally friendly products as functionally pragmatic and down to earth for them. In addition, they perceive that these types of products are in line with international environmental values. To express themselves with such products and build their own identity by owning products in harmony with their values, they search for environmentally friendly products. Thus, we propose H2.

Hypothesis 2 (H2). *Materialism has a positive effect on ESB.*

2.2. Costly Signaling Theory

The present study postulates a direct relationship between materialism and consumers' exploratory buying tendencies for environmentally friendly products based on materialistic life goals and CST. Specifically, materialistic values emphasizing extrinsic life goals, such as material success and social status [24,26], are likely to strengthen an exploratory buying tendency toward environmentally friendly products. Given the assertion that one of the materialistic personality traits is nongenerosity, which is motivated by an egoistic interest in oneself rather than others [23], this conjecture may seem somewhat contradictory. However, CST reasonably accounts for it. The theory views seemingly wasteful behaviors carrying extra costs in terms of money, time, energy, or risk as reliable signals representing desirable individual qualities or resources [11,12]. Thus, individuals often engage in behaviors to convey truthful information about themselves even at high costs, expecting that these extra costs would increase the reliability of the information they signal [11,35]. Through costly signals, the senders compete for status in groups and ultimately seek to gain the power, mates, or economic resources correlated with that status [35].

Consumer researchers have often used CST to explain luxury, status, and conspicuous consumption [7,13–15,36]. The acquisition and possession of luxury products, even when functionally equivalent but cheaper products are available in the market, is a reliable way to signal one's wealth and status effectively [7,13–15,37]. CST was first proposed to examine the biological behavior of animals [12]. Subsequently, the theory has also been applied to examine human behavior. Humans differ from animals in that they are social. Therefore, costly signaling through luxury brands is a beneficial social strategy, as the signaler can receive favorable treatment from others in social interactions [15].

CST can also explain the purchase of environmentally friendly products. Individuals sometimes engage in altruistic behaviors, such as philanthropy and charity, at their own expense [11]. According to CST, assisting others without asking for anything in return serves as a signal that an individual has a desirable altruistic quality and high status [11,16]. This type of altruism is referred to as competitive altruism, which is unlike reciprocal altruism that requires a return in-kind. What individuals expect from behaviors based on competitive altruism is for others to have a positive image of and treat them more favorably [11,38].

Purchasing environmentally friendly products can be considered in a similar vein. Prior research indicates that possessing green-labeled products that cost more than other functionally equivalent products makes the owner more environmentally conscious [13]. Although environmentally friendly products tend to be more expensive [16], one of the critical reasons for purchasing them is to gain a favorable reputation as an environmentally conscious altruist, thereby demonstrating a high social status [7,16]. Thus, the behavior of buying costly environmentally friendly products has an aspect of the buyer's signal, aiming to achieve external goals, including status, fame, and reputation. Thus, materialism will likely facilitate purchasing environmentally friendly products, which serve as a medium to expand and express the owner's image.

Therefore, the extrinsic aspect such as the extended self rather than the intrinsic aspect motivates consumers with materialistic value and low environmental consciousness to seek a product. Based on the World Values Survey, this study refers to environmental consciousness as a degree to which environmental protection is prioritized over economic development [39]. Consumers who are strongly influenced by international information and have a global mindset are particularly sensitive to how they see themselves in the world. In countries and regions with less environmentally conscious people, how one is viewed is a stronger motivation than the actual impact of their behavior on the environment. From this perspective, CST provides a plausible explanation of why materialistic consumers can readily have an exploratory buying tendency for environmentally friendly products. Highly materialistic consumers pursue extrinsic goals, such as financial success and status, rather than intrinsic goals [26,40]. Materialistic consumers will likely purchase environmentally friendly products to socially display their status and prestige. Thus, we propose H3.

Hypothesis 3 (H3). *IDT has an indirect positive effect on ESB through extended self and materialism, and this effect can be confirmed in countries with low environmental consciousness.*

2.3. Intrinsic Motivation for Purchasing Sustainable Luxury

Altruistic consumption behavior is not only for reasons related to extended self but also for individual self-fulfillment. Consumers have intrinsic and extrinsic motivations for their searching and buying behavior [41–43]. We posit that the emergence of environmentally conscious materialism can be driven by both external and internal motivations. Specifically, materialism is primarily fueled by external motivations, whereas environmentally conscious behavior originates from both intrinsic and extrinsic motivations. Consequently, individuals may seek to fulfill their materialistic desires for satisfying their intrinsic values by acquiring sustainable luxury goods. Materialistic values have three dimensions—centrality, happiness, and success [24,44]. Centrality implies a tendency to place the acquisition and possession of valuable goods at the center of one's life, while happiness describes the tendency to consider the possession of goods as a condition. In addition, success means the tendency to judge wellbeing by the quality and quantity of possessions [44]. Each of these dimensions can be considered from a self-fulfillment perspective but not necessarily only in terms of an extended self perspective.

SDT can describe not only extrinsic motivation but also intrinsic consumer behavior. SDT describes the human motivations driven by intrinsic resources for personality and describes the innate psychological needs for self-fulfillment and personal development [45,46]. Consumers build their identity by surrounding themselves with products matching their values and feeling a self-brand connection [47]. Luxury products tend to have clear values and visions for society and the environment, as brand building is essential for them. As consumers become more globally minded, they become more sensitive to social and environmental changes, and materialism increases due to their internal motivation to form relevant self-identities. For example, Shahid and Paul [48] found that consumers in emerging economies are shifting their interest from extrinsic motivation to intrinsic self-fulfilling motivation for purchasing luxury goods. Consumers are likely to collect environmentally friendly luxury prod-

ucts that are in line with their way of thinking. Furthermore, this motivation is more likely to occur in countries with a high level of environmental consciousness. Thus, H4 is proposed.

Hypothesis 4 (H4). *IDT has an indirect positive effect on ESB through materialism, and this effect can be confirmed in countries with high environmental consciousness.*

Based on the CST and SDT, we postulate that environmentally friendly materialism is generated from external and internal motivations. Figure 1 summarizes the conceptual design and hypotheses. This study presents a new model that combines CST and SDT to examine the emergence of environmentally friendly materialism in an international context. The model posits that in Japan, consumer behavior, as indicated by CST, is prevalent, whereas in China, the influence of SDT is more pronounced, potentially stemming from a sense of environmental consciousness. Given the limitations of each theory in isolation, it is necessary to integrate these theories to more fully understand the existence of environmentally conscious materialism.

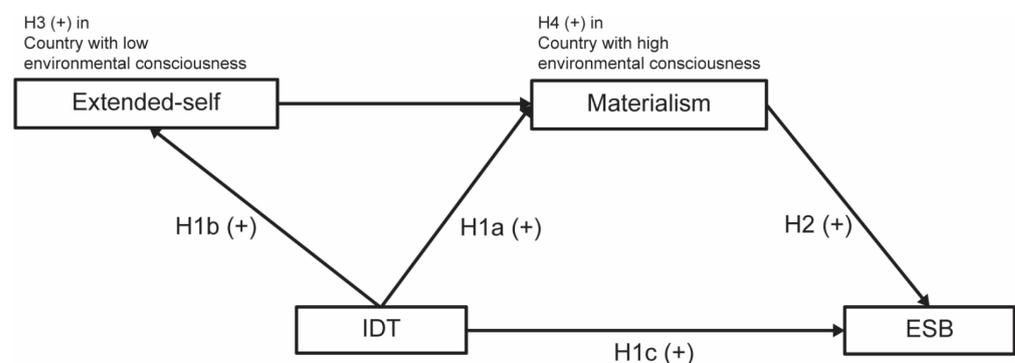


Figure 1. Conceptual framework. H1a denotes the direct effect. H3 describes the indirect effect through extended self and materialism (two mediators model). H4 indicates the indirect effect through materialism (one mediator model).

3. Methods

To investigate how environmentally friendly materialism will be generated and the process of consumers' environmentally friendly products seeking behavior, this study analyzed the relationship among IDT, extended self, materialism, and ESB. We employed structural equation modeling (SEM) and mediation analysis to estimate the relationships and assess the indirect effects of IDT and ESB. We replicated 10,000 bootstrapping samples to estimate the mediation effects [49]. SPSS v.26.0.0.0 and Amos v 26.0.0 were used to estimate our model.

3.1. Target Countries and Sampling

This study investigates environmentally friendly materialism in the context of luxury apparel. Luxury apparel is spreading across various countries, and the characteristics of environmentally friendly materialism are assumed to differ depending on the awareness of people's environmental consciousness in each country. In addition, we assume that the processes of how environmentally friendly materialism are generated are different among countries, as described in our hypotheses. Thus, we conducted a cross-country comparison study. It is necessary to compare countries where luxury goods are frequently purchased and where consumers with materialistic tendencies are generally strong, but people's environmental consciousness differs.

Luxury brands are largely consumed in China. According to the Euromonitor Passport database [50], the market size of luxury brands in China was 428,052 USD in 2022, far more than that of the United States, which is second (234,931 USD), followed by the

United Kingdom (62,174 USD). The market size of the top 10 countries for luxury brands is dominated by the G7 countries plus China, South Korea, and Taiwan. In addition, the top 3 countries with the highest percentage of materialism among these 10 countries are China, South Korea, and Japan [39]. However, among them, Chinese tend to exhibit the highest level of environmental consciousness, while Japanese exhibit the lowest. A clear trend was not discernible in South Korea [39,51]. Due to these circumstances, China and Japan were chosen as the target countries.

3.2. Procedure

We collected consumer samples from China on 7–8 July 2022 and from Japan on 7 July 2022, using the online panel data of two research agencies—Pollfish (China) and Freeasy (Japan). To avoid the occurrence of common method bias, we announced that all responses should be honest; the responses would be anonymized; and the data will be statistically processed anonymously, following the suggestion of Podsakoff et al. [52]. The questionnaire items were presented in a randomized way to each respondent. First, consumers who have purchased luxury apparel in the past two years were screened from all regions of China and Japan. Then, random sampling was conducted until the sample size in each country reached 400, using an equal allocation sampling method to distribute the age and gender as evenly as possible. The respondents were asked to respond based on their previous experiences of purchasing luxury products. The demographics of our sample data are described in Table 1, and they are controlled for estimating our model.

Table 1. Sample descriptions.

		Japan		China		Total	
Gender	Male	200	50.0%	183	45.8%	383	47.9%
	Female	200	50.0%	217	54.3%	417	52.1%
Age	≤19	40	10.0%	48	12.0%	88	11.0%
	20–29	80	20.0%	59	14.8%	139	17.4%
	30–39	80	20.0%	91	22.8%	171	21.4%
	40–49	80	20.0%	70	17.5%	150	18.8%
	50–59	70	17.5%	62	15.5%	132	16.5%
	≥60	50	12.5%	70	17.5%	120	15.0%
Education	Middle school	16	4.0%	15	3.8%	31	3.9%
	High school	116	29.0%	37	9.3%	153	19.1%
	Vocational technical college	66	16.5%	64	16.0%	130	16.3%
	University	174	43.5%	264	66.0%	438	54.8%
	Postgraduate	28	7.0%	20	5.0%	48	6.0%
Household income level	1	77	19.3%	20	5.0%	97	12.1%
	2	137	34.3%	66	16.5%	203	25.4%
	3	65	16.3%	73	18.3%	138	17.3%
	4	42	10.5%	60	15.0%	102	12.8%
	5	55	13.8%	46	11.5%	101	12.6%
	6	5	1.3%	42	10.5%	47	5.9%
	7	19	4.8%	74	18.5%	93	11.6%
	Prefer not to say	0	0.0%	19	4.8%	19	2.4%
Children	None	227	56.8%	108	27.0%	335	41.9%
	More than one	173	43.3%	292	73.0%	465	58.1%

The definitions of the household income level in each country are as follows: Japan: 1 = less than JPY 2,800,000; 2 = JPY 2,800,000–5,579,999; 3 = JPY 5,580,000–8,359,999; 4 = JPY 8,360,000–11,149,999; 5 = JPY 11,150,000–13,939,999; 6 = JPY 13,940,000–16,729,999; and 7 = JPY 16,730,000 or more. China: 1 = less than CNH 10,000; 2 = CNH 10,000–24,999; 3 = CNH 25,000–39,999; 4 = CNH 40,000–59,999; 5 = CNH 60,000–89,999; 6 = CNH 90,000–149,999; 7 = CNH 150,000 or more.

3.3. Measurement Items

Existing measurement scales—confirmed reliability and validity—were used in this study. IDT is measured using an eight-item scale proposed by Cleveland and Laroche [21]. Extended self is measured using a four-item scale assessing the trend of extended self about luxury consumption proposed by Le Monkhous et al. [31]. The materialism value scale by Richins [44] is used to evaluate consumer materialism. This scale comprises three dimensions—success, centrality, and happiness. Richin [44] shortened the original scale developed by Richins and Dawson [24], and this study uses this shortened nine-item scale (success: three items; centrality: three items; and happiness: three items) to measure the trend of consumer materialism. ESB is assessed by modifying the scale of exploratory acquisition of products (comprising 10 items) proposed by Baumgartner and Steenkamp [53]. This scale is not made for environmental product exploration; therefore, we modified the items to target environmentally friendly products for their exploratory actions. All items are developed in English, so we translated them into Chinese and Japanese using a back-translation method [54]. All constructs were measured on a seven-point Likert scale.

4. Data Analysis and Results

4.1. Convergence, Consistency, Construct, and Discriminant Validity

This study confirmed measurement validity through a two-step approach using exploratory and confirmatory factor analyses, following the recommendations by Anderson and Gerbing [55] and Hair et al. [56]. First, exploratory factor analysis with ProMax rotation and maximum-likelihood estimation method was conducted to assess the measurement scales in China ($n = 400$) and Japan ($n = 400$). The scale of materialism is not well converged, and some items have very low factor loadings of less than 0.30. In addition, the minimum value of commonality was 0.47. The eigenvalues were below for factor 4 (1.158) and factor 5 (0.803); considering the Kaiser–Guttman criterion, four factors were appropriate with our data. The cumulative eigenvalue for the four factors was 69%. Although some items were deleted, the remaining items were categorized as success, centrality, and happiness concepts, covering all components of materialism. Therefore, these items were used to measure the trend of materialism. We found that one item measuring ESB has lower factor loading. Items without sufficient factor loadings were removed from our model to proceed with validation [56]. The Kaiser–Mayer–Olkin ranking is 0.97 ($p < 0.001$), indicating that our sample size is adequate, and 62% of the cumulative percentage of eigenvalues has four factors.

Second, we conducted confirmatory factor analysis (CFA) in multiple groups in China ($n = 400$) and Japan ($n = 400$) using the maximum-likelihood estimation method to examine convergent validity. Our model shows a good fit ($\chi^2 = 1375.10$, $df = 538$, $p < 0.001$, $CFI = 0.915$, $TLI = 0.905$, $SRMR = 0.051$, and $RMSEA = 0.044$). These scores meet the criteria proposed by Hair et al. [56]. Factor loading, Cronbach's alpha, composite reliability (CR), and average variance extracted (AVE) were used to assess convergent validity, internal consistency, and construct validity, respectively. They are listed in Table 2; all scores have adequate values, confirming the reliability and validity of our model.

Table 2. Convergent validity, internal consistency, and construct validity.

		Mean	Standard Deviation	Factor Loadings		
				Japan	China	Total
Self-identification with global consumer culture: IDT (α : 0.90, CR: 0.90, AVE: 0.53): Cleveland and Laroche [21]						
1	The way that I dress is influenced by the advertising activities of foreign or global companies.	4.28	1.60	0.76	0.76	0.79
2	Advertising by foreign or global brands has a strong influence on my clothing choices.	4.45	1.56	0.80	0.68	0.77
3	I pay attention to the fashions worn by people in my age group that live in other countries.	4.30	1.69	0.78	0.68	0.76
4	I try to pattern my lifestyle, way of dressing, etc. to be a global consumer.	4.40	1.58	0.67	0.71	0.71
5	I like reading magazines about fashion, décor, and trends in other countries.	4.56	1.61	0.75	0.61	0.73
6	I prefer to wear clothing that I think is popular in many countries around the world rather than clothing traditionally worn in my own country.	4.34	1.51	0.66	0.70	0.68
7	I actively seek to buy products that are not only thought of as “local”.	4.09	1.59	0.66	0.56	0.64
8	I identify with famous international brands.	4.43	1.52	0.67	0.72	0.73
Extended self (α : 0.84, CR: 0.84, AVE: 0.52): Le Monkhous et al. [31]						
9	People buy luxury goods to reveal a little about who they are.	4.71	1.53	0.72	0.68	0.73
10	People buying luxury goods belong to an elite class.	4.77	1.48	0.68	0.71	0.71
11	Buying luxury goods is synonymous with success.	4.56	1.57	0.78	0.71	0.73
12	Buyers of luxury goods are wealthy people.	4.69	1.52	0.71	0.61	0.64
13	Buyers of luxury goods are sophisticated people.	4.59	1.56	0.76	0.75	0.79
Materialism (α : 0.76, CR: 0.75, AVE: 0.51): Richins [44]						
14	I like to own things that impress people. (Success)	5.04	1.42	0.73	0.73	0.75
15	Buying things gives me a lot of pleasure. (Centrality)	5.15	1.48	0.64	0.70	0.66
16	I'd be happier if I could afford to buy more things. (Happiness)	4.94	1.45	0.69	0.70	0.72
ESB (α : 0.92, CR: 0.92, AVE: 0.56): Baumgartner and Steenkamp [53]						
17	Even though certain environmental products are available in a number of different choices, I tend to buy the same one. (–)	4.70	1.55	0.77	0.69	0.79
18	I would rather stick with an environmental brand I usually buy than try something I am not very sure of. (–)	4.67	1.48	0.75	0.58	0.74
19	When I see a new environmental brand on the shelf, I'm not afraid of giving it a try.	4.51	1.55	0.79	0.69	0.77
20	When I go to a restaurant, I feel it is safer to order environmentally friendly foods I am familiar with. (–)	4.78	1.53	0.74	0.67	0.75
21	If I like an environmental brand, I rarely switch from it just to try something different. (–)	4.46	1.51	0.73	0.53	0.68
22	I am very cautious in trying new or different environmental products. (–)	4.74	1.52	0.81	0.71	0.81
23	I enjoy taking chances in buying unfamiliar environmental brands just to get some variety in my purchases.	4.36	1.56	0.71	0.57	0.70
24	I rarely buy environmental brands about which I am uncertain how they will perform. (–)	4.33	1.56	0.71	0.49	0.65
25	I usually buy the same kinds of environmentally friendly goods on a regular basis. (–)	4.57	1.54	0.77	0.73	0.81

(–) means a reversed item.

Discriminant validity is assessed using the heterotrait–monotrait (HTMT) ratio of correlations [57]. The values are presented in Table 3. According to Klein's [58] criterion,

the threshold of HTMT for clear discriminant validity is below 0.85. All values meet the criteria in our model, so discriminant validity is confirmed.

Table 3. HTMT ratio of correlations for assessing discriminant validity.

	1	2	3
1. IDT			
2. Extended self	0.72		
3. Materialism	0.67	0.70	
4. ESB	0.81	0.67	0.69

Although we have implemented measures to avoid common method bias, it remains a concern because there were questions about both independent and dependent variables in the survey. Thus, we tested the influence of common method bias using the marker variable technique [52,59]. We used the blue attitude scale as a marker variable. This scale comprises four items relevant to people's attitude toward the blue color suggested by Simmering et al. [60]—"I prefer blue to other colors", "I like the color blue", "I like blue clothes", and "I hope my next car is blue". After adding marker items, marker factor, and paths to all other items from the marker factor in the CFA model, we compared a model with fixed inter-factor correlations (Method-R) and an unfixed model (Method-U). The degree of common method bias is assessed by whether a significant difference exists between the two models or not [59]. We found no statistically significant difference between the two models ($\Delta\chi^2 = 9.89$, $\Delta df = 6$, $p = n.s.$). Through this process, we confirmed that common method bias is not serious.

In addition, we tested non-response bias in our survey. The degree of non-response bias can be revealed by testing whether there are significant differences in each variable between early and late respondents, following Armstrong and Overton's [61] suggestion. No significant differences between the two groups were identified for all variables. Thus, non-response bias is not serious.

4.2. Measurement Invariance

To compare China and Japan, we distributed the same questionnaires in both countries. Somehow, the back-translation method ensures uniformity in the meaning of the questions in both countries [54]. However, a measurement invariance test was conducted to confirm that our survey questions convey similar meanings in the two countries. A configural model, a metric model, and a scalar model are compared to assess the degree of measurement invariance [62,63]. A configural model assumes the same factors between groups, so the number of factors is fixed in this model. Our configural model had a good fit ($\chi^2 = 1375.10$, $df = 538$, $p < 0.001$, $CFI = 0.915$, $TLI = 0.905$, $SRMR = 0.051$, and $RMSEA = 0.044$), confirming configural invariance. To test metric invariance, in addition to the number of factors in a metric model, all factor loadings are fixed between groups. A metric invariance can be assessed by comparing ΔCFI , $\Delta SRMR$, and $\Delta RMSEA$ between configural and metric models [58,64]. Our study found that $\Delta CFI = 0.002$, $\Delta SRMR = 0.000$, $\Delta RMSEA = 0.000$, and they adequately meet the criteria proposed by Chen [65], confirming metric invariance. A scalar invariance can be confirmed by comparing metric and scalar models. Not only the number of factors and factor loadings but also intercepts between groups are fixed in a scalar model. We observed changes of $\Delta CFI = 0.029$ and $\Delta SRMR = 0.034$, which does not support a scalar invariance slightly. Steenkamp and Baumgartner [62] indicated that a scalar invariance is sometimes not supported in consumer research and presented a more relaxed assumption—a partial intercept restriction (partial model) for assessing measurement invariance. Following their suggestion, the ΔCFI , $\Delta SRMR$, and $\Delta RMSEA$ of the full metric and partial scalar models were within Chen's [65] criteria. A summary of the measurement invariance test is presented in Table 4. Through these procedures, we confirmed measurement invariance between Chinese and Japanese samples.

Table 4. Measurement invariance test.

	χ^2	df	χ^2/df	RMSEA	Δ RMSEA	SRMR	Δ SRMR	CFI	Δ CFI
Full configural	1375.10	538	2.56	0.044	-	0.051	-	0.915	-
Full metric	1410.85	559	2.52	0.044	0.000	0.051	0.000	0.913	Full configural–Full metric
Full scalar	1723.40	584	2.95	0.049	−0.005	0.085	−0.034	0.884	Full metric–Full scalar
Partial scalar	1496.66	563	2.66	0.046	−0.002	0.054	−0.003	0.905	Full metric–Partial scalar

4.3. Results of SEM and Mediation Analysis

To test H1 and H2, we conducted a multiple group SEM. Table 5 presents the results of the SEM. The model fit is good ($\chi^2 = 1880.321$, $df = 870$, $p < 0.001$, CFI = 0.913, TLI = 0.901, SRMR = 0.060, and RMSEA = 0.038). The R^2 values range from 0.435 to 0.788. Regarding the demographics, we observed that, in China, ESB is high among males and increases with old age and household income. Other variables such as educational level and the existence of children are not significant in China. In Japan, we found that only ESB increases with old age. Other variables such as gender, educational level, household income, and the existence of children are not significant.

Table 5. SEM results.

				Standard β	Standard Error	t-Value	p-Value	R^2
China ($n = 400$)	IDT	→	Materialism	0.492	0.079	5.456	<0.001	0.471
	Extended self	→	Materialism	0.239	0.088	2.736	<0.01	
	IDT	→	Extended self	0.727	0.059	10.698	<0.001	
	IDT	→	ESB	0.110	0.063	1.441	<i>n.s.</i>	0.667
	Materialism	→	ESB	0.714	0.093	7.254	<0.001	
	Gender	→	ESB	−0.100	0.077	−2.404	<0.05	
	Age	→	ESB	0.124	0.003	2.270	<0.05	
	Education	→	ESB	0.001	0.049	0.011	<i>n.s.</i>	
	Household income level	→	ESB	0.145	0.020	3.190	<0.01	
Child	→	ESB	−0.024	0.157	−0.310	<i>n.s.</i>		
Japan ($n = 400$)	IDT	→	Materialism	0.171	0.063	2.399	<0.05	0.696
	Extended self	→	Materialism	0.712	0.081	8.367	<0.001	
	IDT	→	Extended self	0.659	0.059	10.551	<0.001	0.435
	IDT	→	ESB	0.759	0.063	11.771	<0.001	
	Materialism	→	ESB	0.175	0.058	3.335	<0.001	0.788
	Gender	→	ESB	−0.005	0.074	−0.168	<i>n.s.</i>	
	Age	→	ESB	0.097	0.003	2.656	<0.01	
	Education	→	ESB	−0.001	0.035	−0.029	<i>n.s.</i>	
	Household income level	→	ESB	−0.027	0.023	−0.831	<i>n.s.</i>	
Child	→	ESB	−0.018	0.103	−0.401	<i>n.s.</i>		

$\chi^2 = 1880.321$, $df = 870$, $p < 0.001$, CFI = 0.913, TLI = 0.901, SRMR = 0.060, RMSEA = 0.038.

Our results indicate the positive effect of IDT on materialism (China: $\beta = 0.492$, $p < 0.001$, $R^2 = 0.471$; Japan: $\beta = 0.171$, $p < 0.05$, $R^2 = 0.696$), extended self (China: $\beta = 0.727$, $p < 0.001$, $R^2 = 0.529$; Japan: $\beta = 0.659$, $p < 0.001$, $R^2 = 0.435$), and ESB (China: $\beta = 0.110$, $p = n.s.$, $R^2 = 0.667$; Japan: $\beta = 0.759$, $p < 0.001$, $R^2 = 0.788$). These results support H1a and H1b, and partially support H1c. In addition, we found that extended self has a positive effect on materialism. Our results also revealed the positive effect of materialism on ESB in both countries (China: $\beta = 0.714$, $p < 0.001$, $R^2 = 0.667$; Japan: $\beta = 0.175$, $p < 0.001$, $R^2 = 0.788$), supporting H2.

Positive trends were observed in both countries, although the effect sizes differ. In particular, the effect of IDT on materialism, as well as extended self and materialism on ESB, is stronger in China than in Japan. However, the effect of IDT on ESB and the impact of extended self on materialism are greater in Japan than in China. Our results suggest

indirect effects of IDT on ESB via extended self and materialism as hypothesized in H3 and H4. To estimate these indirect effects, a multigroup mediation analysis was conducted.

We found some significant indirect effects of IDT on ESB and different trends in China and Japan, as presented in Table 6. The indirect effect of IDT on ESB through extended self and materialism is confirmed in Japan ($\beta = 0.080$, $p < 0.05$), whereas this indirect effect is insignificant in China ($\beta = 0.103$, $p = n.s.$), supporting H3. However, IDT influences ESB indirectly via materialism ($\beta = 0.291$, $p < 0.001$), although the direct effect is not significant in China. This indirect effect cannot be confirmed in Japan ($\beta = 0.029$, $p = n.s.$). These results also support H4. Different processes through which IDT influences ESB are found. Full mediation effect only via materialism is confirmed in China. However, in Japan, despite the strong direct effects, indirect effects through extended self and materialism also exist, which implies partial mediation.

Table 6. Mediation analysis.

					Standard β	Standard Error	95%CI (Lower)	95%CI (Upper)	p -Value	Mediation	
China ($n = 400$)	IDT		→	ESB	0.110	0.16	−0.21	0.34	<i>n.s.</i>	Full mediation	
	IDT	→	Materialism	→	ESB	0.291	0.12	0.15	<0.001		
	IDT	→	Extended self	→	Materialism	ESB	0.103	0.08	−0.01		0.28
Japan ($n = 400$)	IDT		→	ESB	0.759	0.06	0.62	0.87	<0.001	Partial mediation	
	IDT	→	Materialism	→	ESB	0.029	0.03	0.00	0.11		<i>n.s.</i>
	IDT	→	Extended self	→	Materialism	ESB	0.080	0.04	0.01		0.16

$\chi^2 = 1880.321$, $df = 870$, $p < 0.001$, CFI = 0.913, TLI = 0.901, SRMR = 0.060, RMSEA = 0.038. CI: Confidence intervals (Estimated by 10,000 Bootstraps).

5. Discussion

Globally minded consumers are growing due to the modernization of internet technology, and our data revealed that IDT can be a starting point for generating environmentally friendly materialism. The global trend toward IDT is on the rise due to increased globalization of markets and high availability of information from various countries and regions. Consumers with high IDT gather information from international sources. In particular, the apparel industry is regarded as a sector with a highly negative impact on the environment [2,3]. Therefore, firms offering apparel goods internationally consider environmental efforts important, and they share this type of information with stakeholders. When consumers are exposed to this type of information, it encourages them to seek environmentally friendly products. In addition, our data revealed that IDT has a huge effect on enhancing consumers' extended self-motivation. We focused on luxury apparel, and this type of product is consumed conspicuously [7].

Consumers with high IDT are exposed to a variety of cutting-edge designs, technologies, and so on from all over the world and express themselves as being in pursuit of the state of the art. The existing CST framework has been applied to explain consumers' self-expressive consumption [13,14,36]. The theory considers the showing off of consumers' possessions as a signal to others. In this respect, the relationship between IDT and extended self can be explained by CST.

This study also employed the concept of CST in the mechanism of the origin of environmentally conscious materialism. Self-expression using luxury products is not only limited to attributes such as cutting-edge design and technology but also includes cases where consumers themselves express the values held by a brand by wearing its products. Consumers who sympathize with a brand's concept of environmental concern perceive the brand as an extension of themselves. This increases the motivation for materialism to own and wear a variety of environmentally friendly products, which in turn increases ESB.

In this study, we confirmed the relationship between IDT and ESB in Japan and China via the two mediators of extended self and materialism. In Japan, where awareness of environmental consciousness is relatively low, it can be inferred that acquiring environmentally conscious products is not only motivated by the contribution to society but also the fact that it is part of self-expression is a major motivation.

In Japan, we found a mediation effect of extended self and materialism (two-mediators model), whereas in China, we found a mediation effect in which IDT increases ESB through materialism (one mediator model). Furthermore, in China, we could not confirm the direct effect of IDT on ESB but only the indirect effect of IDT on ESB. In Japan, external motivation influences environmentally conscious materialism, but in China, where consumers are highly environmentally conscious, internal motivation may also play a significant role.

Under the SDT framework, it can be explained that consumers' sense of wellbeing is enhanced when their decisions and actions benefit society. From the perspective of intrinsic motivation, consumers' sense of wellbeing is enhanced by being surrounded by brands that are linked to the self. As the mediating effect of extended self could not be confirmed, it is assumed that, in China, environmentally conscious materialism arises from intrinsic motivation.

In countries where there is strong environmental consciousness, such as China, it can be assumed that environmentally conscious materialism is driven by intrinsic motivations. Conversely, in countries with weak environmental consciousness, such as Japan, environmentally conscious materialism is likely to be driven by extrinsic motivations. Therefore, the significant mediating pathways in the data used in this study vary across countries. In our model, the mediating effect is consistently demonstrated through materialism, indicating the presence of environmentally conscious materialism. Our findings suggest a full and partial mediation trend in China and Japan, respectively. This implies that environmentally friendly materialism is more likely to arise when individuals have a heightened environmental consciousness and when their behavior is driven by intrinsic motivations. Conversely, for countries with weak environmental consciousness, the direct effect outweighs the mediating effect. This indicates that although environmentally friendly materialism does exist in such countries, it is relatively limited and takes on different mechanisms, such as being motivated by conspicuous benefits.

Theoretical Implications

We examined the emergence of environmentally friendly materialism from the perspectives of CST and SDT. This study proposes a novel model that integrates two well-established theories—CST and SDT. The proposed model aims to provide a more nuanced understanding of how environmentally friendly consumers emerge from an international perspective by clarifying the underlying mechanisms. Based on our data, we found that environmentally friendly materialism may occur through both external and internal consumer motivations. A widely accepted view is that materialistic values are closely associated with extrinsic goals such as financial success, social recognition, and appealing appearance, and the excessive pursuit of such values and goals decreases wellbeing [24,26,40]. However, we found that environmentally friendly materialism can be involved in motivations not only toward extrinsic goals but also toward intrinsic goals such as “community feelings (helpfulness)” [26,40] to improve the environment. Moreover, the findings imply that the explanatory power of CST and SDT on the development of environmentally friendly materialism is contingent upon individuals' attitudes toward environmental consciousness.

Furthermore, our finding implies that the relationship between materialism and wellbeing may not be necessarily negative when accompanied by altruisms such as environmental consciousness. Thus, this study extends the traditional conceptual understanding of materialism by revealing that intrinsic motivation can pertain to materialistic values. In the literature, environmentally friendly materialism has not been sufficiently examined in the framework of CST and SDT. The present study clarified the point at which consumers express altruistic values as signals to others. Although CST has been considered based on the assumption that people express status and superiority as signals, when this theory is applied to consumer behavior, human altruism should be recognized and considered as part of the signal. SDT also explains the mechanism through which individuals gain a sense of wellbeing by making their own decisions. However, in consumer behavior, not only making purchasing decisions on one's own but also the act of searching for related

products in one's surroundings may contribute to the sense of wellbeing. The existing literature on SDT focused on the decision-making and motivational aspects of individuals, but this study suggests that post-decisional brand or product search and acquisition behavior is also important for outcomes such as satisfaction and happiness. This study contributes to a deeper understanding of SDT and expands on the factors that need to be considered. It is suggested that national differences are related to the tendency for generating environmentally friendly materialism. In countries with low environmental consciousness, an individual benefits from purchasing environmentally friendly products are important. However, in countries with high environmental consciousness, the internal motivation of each individual to care for the environment can be the driver of environmentally friendly materialism.

6. Conclusions

Environmental destruction is continuing worldwide, and not only corporations but also governments and individuals are expected to respond to this issue. Therefore, it is essential to examine the mechanism of how environmentally conscious consumers are generated. Materialistic consumers have been recognized as having a major burden on the environment. This is because materialism is often accompanied by mass consumption, which encourages mass production by corporations. However, in recent years, there have been environmentally friendly materialist consumers who seek to surround themselves with and possess environmentally friendly brands and products. This study clarified the mechanism of how they emerge. Once the mechanism is clarified, there will be room to consider measures to increase the number of these people, which will enable further improvement of the social environment.

The results of this study confirm that the globalization of consumers is the starting point for the generation of environmentally friendly materialism to satisfy consumers' intrinsic motivation. IDT has been found to directly and indirectly encourage consumers to engage in seeking environmentally friendly products. While this study focused on China and Japan, it is widely assumed that this trend is occurring on a global scale, as per previous research [33]. Nevertheless, the findings of this study suggest that the mechanisms through which IDTs influence ESB may vary across countries. To examine this further, we selected and compared countries with varying levels of environmental consciousness and a high consumption of luxury apparel—China, which has a relatively high level of environmental consciousness, and Japan, which has a relatively low level. Despite their geographic proximity and partially shared cultural background, China and Japan exhibit significant differences in environmental attitudes, indicating that the impact of IDT on the process leading to ESB varies between them. Our results indicate that environmentally conscious materialism is driven by intrinsic motives in countries with high levels of environmental consciousness, whereas in countries with a low environmental consciousness, it is driven by extrinsic motives. Although the promotion of IDT can enhance the global ESB trend, marketing strategies must be tailored to the environmental consciousness of the target population in the company's operational area. In particular, extrinsic motives should be considered in addition to intrinsic motives when targeting countries with low environmental consciousness. The process varies from country to country; considering consumers' internal and external motivations is necessary to generate environmentally friendly materialism.

6.1. Managerial Implications

To reduce the burden on the environment and build a sustainable world, companies and governments are required to take action. To encourage consumers to take environmentally conscious actions, they must understand the current issues and recognize the benefits of such actions. The most important factor in the emergence of environmentally friendly materialism is for consumers to have a global mindset. It is necessary to broaden their perspective not only domestically but also on a global level, in which multinational

corporations play an important role. Companies with an international presence are required to carefully communicate to consumers about the current state of society and the environment, the challenges they face, the beliefs they have about these issues, and how these beliefs are reflected in their brands and product development.

The trend of environmental consciousness differs from country to country, and this trend influences the emergence process of environmentally friendly materialism. In countries with low environmental consciousness, consumers' search for environmentally conscious products is promoted as they become more globally minded. We found that even consumers who are not usually interested in environmental friendliness change their mindset when brands and products they are interested in adopting environmentally friendly behaviors. We also confirmed that consumers in these countries acquire environmentally friendly brands and products as a medium of self-expression, and environmentally friendly materialism is generated by their desire to keep eco-friendly brands and products around them.

In countries with high environmental consciousness, environmentally conscious brands and products tend to be consumed as an internal desire fulfillment for each individual rather than as a medium of self-expression. The more global consumers become, the more they choose and own brands and products to protect the environment and build a sustainable world. This generates environmentally friendly materialism. Firms can effectively stimulate consumers' variety-seeking behavior by expanding their lineup of environmentally friendly brands and products. It will also be important to stimulate consumers' novelty-seeking behavior by constantly launching innovative environmental actions and reflecting them in new products.

6.2. Limitations and Future Research

Despite the significant theoretical and practical contributions of this study, several issues remain to be addressed. First, it is necessary to examine the specificity of the targeted products. In this study, luxury apparel was used as the target product for investigation. Luxury apparel is a product with a high environmental burden and conspicuousness. It is necessary to verify whether similar results can be obtained for products with relatively low environmental burdens or for personal care products, which are not required to be as visible as luxury apparel.

Second, the cultural context needs to be examined in more depth. In this study, we conducted our examination in China and Japan. China has a culture known as "conscious of face-saving: the sense of face", that is, a tendency to show off one's possessions to others [66]. However, this study could not confirm the mediation role of extended self in generating environmentally friendly materialism in China. It is necessary to examine whether this is a special tendency inherent in consumers who possess a global mindset and environmentally conscious products by considering their cultural background.

Third, to seek generalities, such as whether the results of this study apply to countries other than China and Japan, additional validation in other countries is needed. As luxury apparel products are consumed actively in the G7 countries, additional tests should be conducted in these countries.

Fourth, it is imperative to investigate the dynamic interplay between CST, SDT, and environmentally friendly materialism. How the effect of CST and SDT on environmentally friendly materialism evolves and the significant factors that contribute to this evolution are issues that require further exploration in the future.

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