

Article

Country Differences in Determinants of Behavioral Intention towards Sustainable Apparel Products

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Abstract: Increased demands for sustainable apparel products require research to understand better how to encourage sustainable buying behavior effectively, especially in the understudied areas of cross-cultural research. This study, which includes respondents from the UK, US, and China (total n = 711) who completed an online survey, explores determinants of behavioral intention toward sustainable apparel products (SAP). This paper contributes to examine both consumer characteristics (shopping values, consciousness of sustainability, perceived consumer effectiveness, and environmental knowledge) and marketing perspective (evaluation criteria of SAP) determinants for encouraging sustainable apparel consumption behaviors. Significant country differences also emerged, indicating the positive impact on behavioral intention to sustainable apparel products across three countries. Results of structural equation modeling analysis demonstrated there were differences and similarities in the effect of consumers' characteristic factors and marketing perspective factors on SAP behavioral intention among three countries. The results validate that differentiated marketing strategies in the sustainable apparel industry are required when targeting global consumers to boost sustainable apparel consumption and successfully help to remedy the crisis facing our planet and further generation.

Keywords: sustainable apparel products (SAP); shopping values; product criteria; perceived consumer effectiveness (PCE); environmental knowledge (EK); behavioral intention; country differences



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1. Introduction

A rapid increase in consumption has altered everyday consumption behavior and resource use, habitually affecting undesirably environmental footprint [1]. The textiles and apparel (T&A) industry has been presumed to cause nearly 10% of global carbon emission and production and is one of the most polluting industries in the world [2,3]. Apparel and textiles currently play a crucial role in the global public discussion on climate changes, chemical polity, water scarcity, human rights, and animal welfare. Production and consumption of T&A raise several environmental issues and concerns that pose questions about how people live their political, social, and economic lives [1,3]. The rise of sustainable consumption has emerged as consciousness and experience on the role of consumers of the importance of sustainable assertions has become more prevalent, and demand for sustainable products including the apparel and textile sector has increased [4–7].

Many of the challenges concern several common societal and personal methods and the role of various and often conflicting values associated with apparel consumption. Sustainable apparel is a growing market of the clothing and textile industry with a potential rapid growth as consumers gain more awareness about the unsafe treatment of laborers and the fast fashion industry's environmentally depleting manufacturing processes [8,9]. Sustainable apparel has the possibility to alter the direction consumers buy and use the way the industry will result in positive socially and environmentally helpful effects. As the advantages of sustainable apparel are uncovered, the number of applications is still

small [10]. Several determinants were found to influence the behavioral intention (BI) to buy sustainable apparel products, which can be used as a criterion in the segmentation or characterization of sustainable consumers. The purpose of this study is to identify which determinants really affect behavioral intentions of sustainable fashion products.

Much of the study of environmental and sustainable concern originated in Western countries, but comparatively little about sustainable concern and pro-environmental behavior in countries outside of Western cultures [11]. Cultural differences in consumption behaviors may reflect different values or beliefs [12,13]. Understanding the antecedents of sustainable consumption behavior across cultures could be beneficial to managers who must develop and promote pro-environmental and sustainable apparel products (SAP) for international business [14,15]. The objectives of this study are the following: (1) to examine significant differences and similarities in consumers' characteristics (i.e., shopping values, consciousness of sustainability) and marketing perspective factors (i.e., product criteria) driving the behavioral intention to buy SAP across Western (UK and US) and Eastern (China) countries, representing individualistic and collectivist cultures respectively; (2) to identify differences and similarities in the effect of consumers' individual factors and marketing perspective factors on the behavioral intention to buy SAP across three countries. The experimental results of this study will provide as the foundation for a profitable business model using the sustainability concept of apparel. Additionally, this successful business model may be applicable to other "sustainable" areas to promote sustainable fashion movements from a long-term perspective, thereby achieving sustainability entirely in apparel industries.

The structure of this paper is organized as follows: the next section presents insights on the relevant ideas and theoretical background of this study. The Section 3 describes the methods of empirical study including the research model. The Section 4 highlights the results of the quantitative data analyses and outlines country differences in sustainable apparel consumption behaviors. The results are discussed in the Section 5 and conclusion, research contributions, and managerial implications are drawn in the Section 6. The research limitations and future research direction are presented in the Section 7.

2. Theoretical Background

2.1. Sustainability in the Apparel Industry

The apparel industry raises the responsibility for the environment, consumers, and society [16]. Sustainability in the global textile and apparel industry is becoming ever more vital. This industry, characterized by long, complex, and global value chains, and embracing a wide range of stakeholders and interest groups, is confronted with sustainability challenges due to prevalent linear production and consumption patterns [17]. Next to environmental impacts such as water pollution, chemicals, waste accumulation or rainforest destruction, the industry is also responsible for social harm and crises across the world including human rights abuses, child labor or worker discrimination [18]. Sustainability challenge involves multiple, interrelated, and complicated issues.

The apparel and textiles industry accounts for 20% of the world's water pollution, making it the second largest polluting industry after agriculture [19]. Furthermore, the production of textiles requires high resource levels. For instance, cotton, found in most clothing, is the most pesticide-dependent crop in the world, using 25% of the world's insecticides and 11% of pesticides [20]. Furthermore, it takes about three years of one consumer's drinking water (2700 L) to make one cotton t-shirt. Synthetic fibers are developed within factories and do not require water to grow the textile, but the production processes endanger workers and the natural environment using some 8000 hazardous chemicals [21]. Dyes and finishing chemicals and specialty chemicals are applied to textiles in water baths. Eventually the water used is returned to the ecosystem, usually without any attempt to remove the chemicals used in production processes. Groundwater is polluted and the health of those who use water downstream is put at risk due to the harmful chemicals.

Apparel production includes long processes, which generates a high level of negative impact on the environment [22]. Given these facts, our effort to sustain surely embodies apparel. Apparel production is one of the industries that have been associated with the exploitation of both resources and people [23–25]. Sustainable apparel and fashion originated in the 1960s as consumers became aware of the environmental impact of the production of clothing and demanded that the industry change and re-design unsustainable fashion practices [26–28]. Sustainable apparel incorporates several elements, such as developed with pro-environmental and sustainable material over past decades [29,30]. The purpose of this study is to invigorate the sustainability concept in the apparel industries, encourage greater sustainability and find which determinants can motivate behavioral intentions to SAP.

2.2. Determinants of Sustainable Apparel Consumption

2.2.1. Shopping Values

Value can be defined “as the regard that something is held to deserve, the importance, worth, or usefulness of something” [31]. Shoppers’ perceived value and its influence on consumer behavior has attracted significant attention by scholars and marketing practitioners [32]. Shopping values can be described as consumers’ general attitudes toward shopping [33]. It indicates the way shoppers perform their task of shopping [34]. Similarly, Sproles and Kendall [35] defined consumer decision-making style as a “mental orientation characterizing a consumer’s approach to making consumer choices” [36] (Sproles and Sproles, 1990: 137).

Previous research has identified a variety of shopping values. Consumers will evaluate the values they desire to obtain from a retailer and buy from the retailer who satisfies that desire [37]. Noble et al. [37] mentioned shopping goals/motives such as price comparison, assortment seeking, social interaction. Similarly, Diallo et al. [38] identified the shopping values such as quality value and price value. Individuals will gain shopping value when they make buying decisions [39] and several different dimensions have been proposed. These include functional value, economic value (sometimes included within functional value), emotional value (sometimes termed hedonic value), social value, ecological value, epistemic value, and altruistic value [40]. Consumption experiences normally involve the simultaneous creation of more than one type of value [41]. Consequently, researchers often focus on value dimensions that they deem relevant in a particular context. In the present study, utilitarian value, hedonic value, differential value, and social value, are considered relevant to behavioral intentions of sustainable apparel products.

Utilitarian value relates to the utility, ease, and control provided by using goods or services, or performing behaviors [41]. High-quality and utility conscious consumer is a characteristic measuring the degree to which a consumer searches for the best quality in products. This kind of value tends to be extrinsically motivated and is oriented towards benefits for the self. Hedonic value refers to consumer practice that occurs in pursuit of an emotional experience (e.g., confidence), and is intrinsically motivated and self-oriented [42]. Previous research suggests that consumers who feel ethical because of performing sustainable behaviors may derive emotional/hedonic value as a result [43]. Hedonic shopping value conscious consumer measures the extent to which a consumer finds shopping a pleasant activity and shops just for the fun of it. Differential value is focused on a novelty benefit analysis and tends to be intrinsically motivated [41]. This type of value is particularly relevant to innovative consumers, as they perform new seeking behaviors such as buying sustainable apparel products. Social value is directed towards others and relates to influencing other people to achieve a desired goal, such as status or hierarchy in a group [44]. For example, consumers may perceive that being sustainable leads others to view them and their sustainable consumption behavior in a better light.

Consumers may have dissimilar shopping styles and objectives and they are regularly segmented in terms of their shopping values [45]. Regarding the possibility of empirical

correlations between shopping values and a particular consumption behavior such as sustainable product choices [46,47], the following relationship is proposed:

Hypothesis 1 (H1). *Utilitarian.*

Hypothesis 2 (H2). *Hedonic.*

Hypothesis 3 (H3). *Differential.*

Hypothesis 4 (H4). *Social.*

H1 to H4 Shopping values positively affect behavioral intentions of SAP.

2.2.2. Consciousness of Sustainability

As environmental and sustainable concerns and consciousness have been viewed as a necessary precursor of behavioral changes, the research of sustainable concerns and conscious mind is important. Several authors have described environmental concern as a strong attitude towards the preservation of the environment, as one of the key factors influencing sustainable buying behavior [48]. Sustainably conscious consumers are worry about environmental and sustainable problems [49] and toward the protection of environment and human beings. When consumers are conscious of the environment and sustainability, they constantly support most policies or products that seek to conserve or improve it. That is, consumers with a higher degree of consciousness for the sustainability will have different sustainable purchase behavior understood as being more sustainable consumers than those with a lower degree [50–52].

However, consumers are unwilling to put sustainable consumption concerns into practice unless they believe their efforts can make a difference to the environment and society [53]. Research has established that people's environmental worries and perception do not always transform into pro-environmental or sustainable behavior [54]. Consequently, marketers need a clear understanding of this gap between concerns and actions. Increasing environmental destruction and its effects, such as global warming, have led to rising awareness of the importance of sustainability. This has developed consumer consciousness about sustainable consumption and the impact of everyday buying decisions, prompting abundant studies [48,55–57]. This study considers two-dimensional sustainable consciousness including individual pro-environmentalism for nature and corporate social responsibility for rights of human being. The following relationship is proposed:

Hypothesis 5 (H5). *pro-environmentalism.*

Hypothesis 6 (H6). *Social responsibility.*

H5 to H6 Consciousness of sustainability positively affect behavioral intentions of SAP.

2.2.3. Perceived Consumer Effectiveness (PCE)

Perceived consumer effectiveness (PCE) is described as a domain-specific belief that the efforts of an individual can make a difference in the solution to a problem [58] (Ellen et al., 1991). PCE is associated with the concept of perceived behavioral control, which has been researched by academics in the areas of helplessness, locus of control, and perceived control [59,60]. The common theme is that subjects' actions and/or intentions are affected by the degree to which they believe the occurrence of an event can be affected by their actions [61]. The degree to which an individual thinks that he or she has little behavioral control over the outcomes of a behavior has been shown to weaken behavioral intentions distinctively, even under conditions where attitudes toward the behavior are favorable [62]. Likewise, PCE should affect behavioral intentions of products such as

sustainable apparel [59] if individuals believe their behavior will or will not lead to the desired outcome. The following relationship is proposed:

Hypothesis 7 (H7). *Perceived consumer effectiveness positively affect behavioral intentions of SAP.*

2.2.4. Environmental Knowledge (EK)

Knowledge is generally regarded as a precondition for a person's behavior [63]. Consistent with this, knowledge-established campaigns have been a successful tool to promote certain actions in the public, including conservation behavior. Environmental knowledge (EK) is described as information that individuals have about the environment, the ecology of the planet, and the influence of human actions on the environment [64]. A main assumption among researchers has been that an increase in knowledge will increase environmental concern and sustainable behavior, like sustainable apparel consumption. Several studies have indicated that knowledge of environmental problems is related to pro-environmental and sustainable behavior [59,63,65]. The following relationship is proposed:

Hypothesis 8 (H8). *Environmental knowledge positively affect behavioral intentions of SAP.*

2.2.5. Selective Criteria of Sustainable Apparel Products (SAP)

Consumption behaviors can be changed as a result of simple association from marketing stimuli such as the presentation of product criteria [66]. Product criteria refer to the dimensions that are used in evaluating the choice alternatives [67]. Female consumers' apparel purchasing decisions depend on the combined influence of product criteria including price, quality, style, and brand [68]. In particular, for products that have not been popular in the market yet, such as SAP products, due to the uncertainty of marketability, the apparel and textiles industry is fascinated with how consumers respond to SAP products so that product criteria can be emphasized in marketing strategies. This study concentrates on SAP product criteria as determinants of purchase intention to SAP products, taking into consideration aesthetic, functional, brand, and sustainability criteria.

Aesthetics or design criteria are viewed as a complex concept, difficult to define, although they bring pleasure and personal enrichment to the consumer [69]. Despite the substantial body of literature that has highlighted the relevance of aesthetics in culture [70], little attention has been devoted to the concept of aesthetics in the product criteria literature. It has been regarded as a determinant of sustainable consumption [71]. Indeed, we believe that aesthetics constitutes key criteria in the sustainable fashion consumption experience because individuals are exposed to it daily at homes, in retail stores and public places, and especially in such service areas as art, entertainment and other cultural offerings. Functional criteria are for the best quality products by shopping systematically and carefully [35]. Sheth et al. [40] reviewed functional utility as the primary determinant of consumer decision making. Functionality-conscious consumers depend on alternative capacity for physical performance such as reliability and durability [72].

Sustainable criteria refer to the utility to the environment and ecological issues that the consumer perceives from consumption [73]. Sustainable criteria of SAP may be intrinsically motivated by reducing environmental pollutions and contributing towards environmental sustainability and extrinsically motivated by making consumers feel good for being sustainable. Brand criteria refer to a consumer's orientation towards the purchase of premium price brands of good repute. Branded products achieve awareness, reputation, or specific images so that consumers can use the brand name as an evaluative criterion in their product choices. While consumers associate brand-named fashion items with a higher quality than non-branded ones [74]. Exploring which product criteria consumers utilize will also help to better understand if and to which degree they are susceptible to fashion companies undertaking sustainability, which has been identified as a problem in the viewpoint of sustainable fashion products before [16]. The following relationship is proposed:

Hypothesis 9 (H9). *Aesthetic.*

Hypothesis 10 (H10). *Functional.*

Hypothesis 11 (H11). *Sustainable.*

Hypothesis 12 (H12). *Brand.*

H9 to H12 Product criteria of sustainable apparel positively affect behavioral intentions of SAP.

2.3. Country Differences in Sustainable Apparel Consumption

Different structures of political, economic, and cultural environments affect individual values and consciousness, forming different consumption behaviors [75]. The most obvious cultural difference between the UK or US and China is the individualism versus collectivism. Individualistic cultures put higher values on individual rather than group interests, expecting individuals to show themselves freely [76]. Thus, American consumers consider less fear about being different from the others. In contrast, the Chinese look at social relationships with others based on collectivism [76]. In collectivistic cultures, people emphasize conformity for group harmony [77] and refrain from expressing their distinctiveness [75]. Compared with Western consumers, the Chinese are less individualistic and more relational, centering on the interdependence between social relationships and cultural norms although individualism have become rooted within the identities of Chinese young generation [78]. According to Hofstede [79], a collectivist country emphasizes belonging and relationships, whereas an individualistic country underlines privacy and independence. A cross-country study is a helpful approach that clearly aims to highlight similarities and differences in one or other aspects of daily life and use them to initiate possibilities of theoretical query [48].

A cross-cultural study conducted by Xu et al. [75] indicates that American consumers have more positive attitudes toward sustainable products than do Chinese consumers. Although Chinese environmental concerns have been increasing around urban areas [76], Chinese adolescents have a limited understanding of sustainable consumption due to their lack of opportunities to gain relevant knowledge and information [80]. The absence of infrastructure and environmental education resulted in a relatively low level of environmental knowledge of apparel products among Chinese consumers, which in turn did not lead to positive intentions toward sustainable fashion consumption behaviors. In the UK [81] and the US [4,82], however, a higher eco-consciousness and a favorable value shift toward reuse and recycling increased the positive intentions toward clothing for sustainable consumption. The UK and the US are leaders in both social and environmental sustainability [16]. Therefore, data from these two countries were collected to understand sustainable consumption behaviors. Otherwise, consumers in China have recently been paying attention to sustainable consumption [83] and there has been limited research on Eastern countries [84]. Therefore, we included the Chinese sample.

Although there has been growing attention to sustainable apparel products globally, intention toward buying sustainable apparel products is expected to be varied among the three cultures. That is, since different structures of economic and cultural norms affect individual consumers' values, different perceptions, and criteria when they decide to buy apparel products, consequently influencing behavioral intentions [85]. According to the cultural differences discovered in pro-environmental and sustainable consumer behavior in the literature [4,81,82,85–87], we also explore the question of the influence of different countries and cultures in the way they experience biodiversity. Previous studies suggest that across cultures eco-friendly and sustainable consumption behavior is influenced by environmental consciousness and by values evaluated in conjunction with other variables. Table 1 presents earlier research which studied country differences in sustainable consumption behaviors. This study examining the determinants of sustainable consumption behavior indicates that these determinants may have discrepancies among

cultures and differ in their impact on behavioral intention across countries. Therefore, the following hypotheses were proposed.

Table 1. Previous studies on country differences in sustainable consumption.

| Title | Authors, Year | Objectives/Country | Variables | Findings |
|---|--|---|--|---|
| Environmental belief systems: United States, Brazil, and Mexico. | Bechtel, Verdugo, and de Queiroz Pinheiro, (1999) [82] | Analyzing responses from undergraduate to the New Environmental Paradigm (NEP) scale/from the United States, Mexico, and Brazil | Environmental belief systems, the separation from nature (Human Exception Paradigm) from the NEP as a dichotomy | Using confirmatory factor analysis, a trifactorial structure emerged from the Brazilians and Mexicans and a bifactorial from the US sample. |
| Corporate environmentalism across cultures: A comparative field study of Chinese and Japanese executives. | Branzei, Vertinsky, Takahashi, and Zhang, (2001) [14] | Exploring the influence of national culture upon leaders' interpretations of corporate environmentalism/China, Japan | Corporate environmental performance, the influence of national culture, environmental values, socioeconomic contexts upon firm-level greening | Perception of environmental issues differ across nations |
| Explaining green purchasing behavior: A cross-cultural study on American and Chinese consumers | Chan and Lau, (2002) [76] | Examining the applicability of the Theory of Planned Behavior (TPB) to green purchasing behavior of consumers in the Chinese and U.S. | Attitude, subjective norm, and perceived behavioral control; Belief-based measures of attitude, subjective norm and perceived behavioral control | Subjective norm and perceived behavioral control were seen to exert stronger influences on Chinese consumers' green purchasing intention than on American consumers |
| A cross-cultural study of environmental motive concerns and their implications for pro-environmental behavior | Milfont, Duckitt, and Cameron, (2006) [49] | Investigating differences between European New Zealanders and Asian New Zealanders in environmental motive concerns | Three environmental motive concerns egoistic biospheric altruistic pro-environmental behavior | Asian New Zealanders were significantly higher than European New Zealanders on egoistic concern, while European New Zealanders were significantly higher on biospheric concern. |
| Understanding cultural differences in the antecedents of pro-environmental behavior: A comparative analysis of business students in the United States and Chile | Cordano, M., Welcomer, Scherer, Pradenas, and Parada, (2010) [4] | Validating pro-environmental behavior using Schwartz's (1977) norm activation theory, the TRA and a VBN model/the U. S. and Chile | Behavioral intention, attituded, norms, awareness of consequences, acceptance of responsibility, environmental beliefs, values | Chilean business students are more altruistic than business students in the US and Chilean students felt stronger pressures from their peers to engage in pro-environmental behaviors. |
| Cross-country analysis of motives for sustainable Behaviors | Minton, Lee, Orth, Kim, and Kahle, (2012) [86] | Sustainable advertising necessitates research to understand better how to encourage sustainable thought and behavior effectively, especially in the understudied areas of social media/the US, Germany, South Korea | Functional, involvement motives, social media involvement antimaterialistic, recycling behavior, using green transportation, organic food purchase | For all countries, involvement motives lead to recycling behaviors and green transportation use, but only for the US and Germany do involvement motives lead to antimaterialistic views and organic food purchase |
| Second-hand clothing consumption: a cross-cultural comparison between American and Chinese young consumers | Xu, Chen, Burman, and Zhao, (2014) [75] | Investigating young consumers' behaviours towards second-hand clothing from a cross-cultural perspective/the US, China | Past purchase experience, perceived values, and concerns, perceived subjective norm and future purchase intention | Significant differences in young consumers' second-hand clothing consumption behaviour between the two countries |
| Who cares about product sustainability information at the moment of purchase? Consumer evidence from three countries | Pekkanen, Pätäri, Albadera, and Jantunen, (2018) [57] | Knowing what kind of people the sustainability information is likely to reach, and what kind of people would need to be reached by other means to green consumption/Finland, Hong Kong, Spain | Grocery purchasing choices, value, environmental concern Millennials | Values differ between the studied nationalities, but when modelling how values affect the pro-responsibility behaviour the effect of nationality vanishes. |

Table 1. Cont.

| Title | Authors, Year | Objectives/Country | Variables | Findings |
|--|---|--|---|--|
| An examination of attributes and barriers to adopt biomass and solar technology. A cross-cultural approach | Higuera-Castillo, Munoz-Leiva, and Liébana-Cabanillas, (2019) [87] | Analyzing the favorable and unfavorable characteristics for the adoption of biomass and solar energy technology using the NEP scale/Spain, Germany, Mexico | The pro-environmental behavior, the level of anthropocentrism and ecocentrism | Mexico is most likely to adopt renewable energy systems, especially regarding solar panels, followed by Spain and, lastly, Germany |
| What predicts household waste management behaviors? Culture and type of behavior as moderators | Mintz, Henn, Park, and Kurman, (2019) [88] | Examining predictors of different waste management behaviors in a cross-cultural context/Japan, Germany, Israel | Environmental orientation, social norms, waste management behaviors | Both structural contexts (i.e., recycling systems), and cultural factors predict the extent to which people engage in recycling and waste minimization |
| Concern about Biodiversity as a criterion for the classification of the sustainable consumer: A cross-cultural approach. | Murgado-Armenteros, Gutierrez-Salcedo, and Torres-Ruiz, (2020) [48] | Exploring a new dimension to environmental concern: biodiversity/European countries (Spain, Germany, UK, Denmark) | Consumption behavior of olive oils, level of commitment to biodiversity | Identify clusters (not concerned, passive, active and influencers), about their level of biodiversity concern, with differences between countries. |

Hypothesis 13 (H13). *Significant differences exist among UK, US, and Chinese consumers in their behavioral intention to SAP and influential determinants of behavioral intention to SAP.*

Hypothesis 14 (H14). *Significant differences exist among UK, US, and Chinese consumers in the impacts of influential determinants on behavioral intention to SAP.*

3. Methodology

3.1. Conceptual Framework

Consumers' behavior concerning sustainable apparel products is motivated by consumer perspectives (i.e., shopping values, sustainability consciousness, perceived consumer effectiveness, and environmental knowledge) and marketing perspectives (i.e., product criteria of sustainable apparel); therefore, this study formed a conceptual framework. The main aims of this study are to explore whether factors of consumer perspectives and marketing perspectives have effects on behavioral intention toward sustainable apparel products and moderating effects of country differences in this structural model. The conceptual framework of this study is illustrated in Figure 1.

3.2. Measures

The first stage of instrument development involved a review of published literature with reflection and discussion to identify the constructs relevant to determinant variables of SAP buying intentions. The questionnaire was developed by revising previous studies' instruments. The survey comprised questions regarding the respondent's fashion shopping values, sustainability consciousness, perceived consumer efficiency, environmental knowledge of apparel, criteria of SAP, and behavioral intention toward SAP. Survey questions were measured on a seven-point Likert-type scale ranging from "strongly disagree" to "strongly agree". We used 12 items from the scale [72,89] with four measures for each of the factors that comprise fashion shopping values. To measure consciousness of sustainability, we drew on six items from the previous scale [90,91]. Perceived consumer effectiveness [58] and environmental knowledge of apparel [92] were measured by a validated instrument developed by previous research. After the background information regarding SAP had been obtained, respondents were asked with a total of ten items for product criteria of SAP [93,94] and three items of behavioral intentions [95] toward SAP were included, followed by demographic questions.

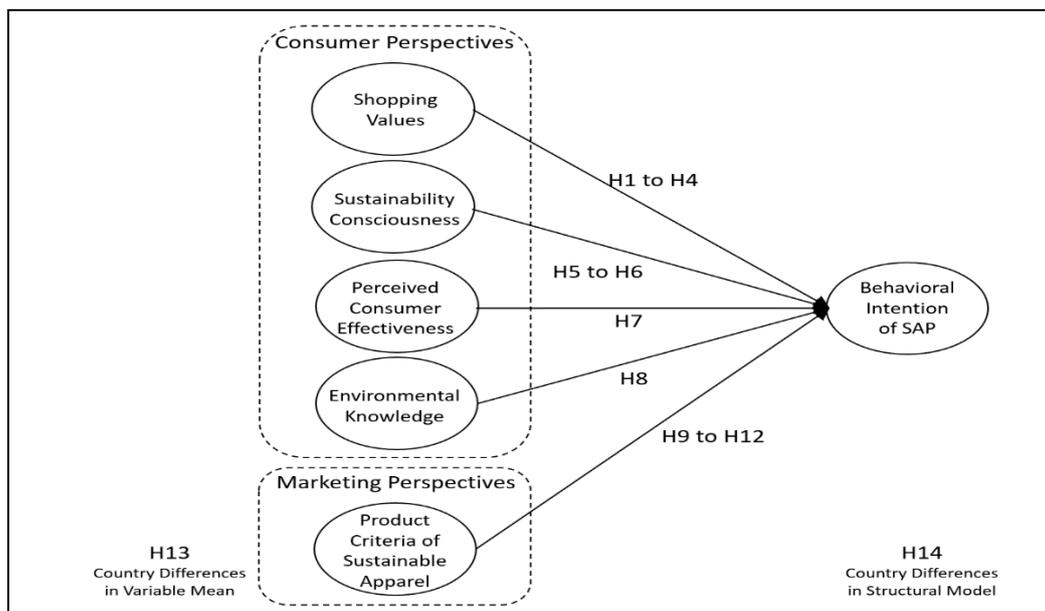


Figure 1. Conceptual framework of sustainable apparel consumption.

3.3. Data and Procedure

To examine the hypothesis, we drew on female samples of respondents aged 20 to 40 years from three countries: the UK, the US, and China. Since female consumers show a greater tendency to engage in sustainable consumption [96,97] and 20–40 age consumers are a major target market for sustainable products [98] this sample could provide important indications concerning sustainable apparel consumption behaviors. Respondents were recruited by Qualtrics, a global and professional online survey firm and were informed that the completion of the online survey was voluntary and anonymous. To develop a representative sample, a consumer panel of the target population was acquired from an online survey firm, which requested responses to an online survey by sending the survey link in an email invitation. Individuals invited to participate in the study were pre-validated and had a pre-existing relationship with the online survey firm, and therefore, received an incentive from the firm. Metropolitan residents experience higher levels of mass media exposure, education, and social and political messaging [99] (Chatterjee, 2008) and may be taken as representative for purposes of conducting an online survey and exploring a sustainable apparel market [97]. The sample was collected by online survey to 711 female respondents from metropolitan residences in the UK (N = 256), the US (N = 230), and China (N = 225). The questionnaire was developed in English first. For the Chinese version, the questionnaire was translated and back translated into Chinese by certified translators. We solved any discrepancies in the translation through additional discussion with the translators. Four translation and back-translation processes were conducted, with the inter-translator reliability coefficient increasing from 0.85 to 0.97. Then, under the supervision of three of the authors, the market research company administered the online survey to respondents in each of three countries.

The sample was distributed evenly among subjects in their 20s, 30s, and 40s in this study. The sample can be briefly described as follows: a total of 45.3% in the UK, 48.7% in the US, and 72.4% in China were married; a large majority of respondents in the UK (82.4%), the US (83%), and China (82.2%) received undergraduate education. The descriptive statistics for the sample are shown in Table 2.

Data were analyzed by factor analysis and reliability test, analysis of variance and Duncan test, and descriptive analysis using SPSS 24.0 version. Structural equation modeling (SEM) was employed to examine the relationship of determinant variables (shopping values, sustainable concerns, EK, PCE, and product criteria of SAP) and buying intentions

toward sustainable apparel products. All hypotheses were tested in the multi-group SEM package of AMOS 24.0.

Table 2. Sample characteristics.

| Variable | | UK (N = 256) | | US (N = 230) | | China (N = 225) | |
|-----------------|---------------|--------------|---------|-----------------------|---------|-------------------|---------|
| | | Frequency | Percent | Frequency | Percent | Frequency | Percent |
| Age | 20 | 91 | 35.5 | 84 | 36.5 | 75 | 33.3 |
| | 30 | 88 | 34.4 | 86 | 37.4 | 75 | 33.3 |
| | 40 | 77 | 30.1 | 60 | 26.1 | 75 | 33.3 |
| Marital status | Married | 116 | 45.3 | 112 | 48.7 | 163 | 72.4 |
| | Single | 111 | 43.4 | 106 | 46.1 | 62 | 27.6 |
| | Others | 29 | 11.3 | 12 | 5.2 | 0 | 0 |
| Education Level | Middle school | 1 | 0.4 | 3 | 1.3 | 1 | 0.4 |
| | High school | 38 | 14.8 | 28 | 12.2 | 10 | 4.4 |
| | Undergraduate | 53 | 20.7 | 49 | 21.3 | 3 | 1.3 |
| | Graduate | 158 | 61.7 | 142 | 61.7 | 182 | 80.9 |
| | Others | 6 | 2.3 | 8 | 3.5 | 29 | 12.9 |
| Cities surveyed | | London | | New York, LA, Chicago | | Shanghai, Beijing | |

4. Results

4.1. Determinants of Behavioral Intentions toward SAP

Applying the AMOS 24.0 program, confirmatory factor analysis (CFA) was completed to estimate the measurement model. The measurement model yielded an acceptable fit: $\chi^2 = 1487.421$, $df = 587$, $\chi^2/df = 2.534$, $p < 0.001$, comparative fit index (CFI) = 0.95, goodness of fit index (GFI) = 0.90, normed fit index (NFI) = 0.92, root mean square error of approximation (RMSEA) = 0.04, and all coefficients were significant. Convergent validity of the constructs was supported through significant t -values of each item's estimated path coefficient on its posited latent construct. All estimated path coefficients had t -values that were significant at the $p < 0.05$ level. The average variance extracted (AVE) of each construct exceeded the cutoff of 0.5, also supporting the convergent validity of each scale [100]. The constructs' validity and reliability were tested in a nested model with three countries. The measures are exhibited in Table 3. Validity and reliability were satisfied with cutoff criteria [101] for all construct. All factor loadings (standardized coefficients) per item were highly significant in three countries. This measurement model was applied for assessing the structural model.

Table 3. Confirmatory factor analysis.

| Factors and Items | UK | US | China |
|--|-------|-------|-------|
| Shopping Values | | | |
| <i>Social values</i> (AVE = 0.69; CR = 0.83) | | | |
| I am envious of people who buy high-end brands. | 0.939 | 0.933 | 0.861 |
| People who buy high-end products seem to socially succeed. | 0.891 | 0.837 | 0.892 |
| People can achieve recognition when they own high-end clothes and accessories. | 0.775 | 0.760 | 0.741 |
| <i>Utilitarian values</i> (AVE = 0.55; CR = 0.78) | | | |
| I consider how strong and safe products are when I choose products. | 0.810 | 0.800 | 0.814 |
| I think the products' utility is important. | 0.647 | 0.571 | 0.780 |
| When I choose products, I consider products' value to price ratio important. | 0.780 | 0.816 | 0.814 |
| <i>Differential values</i> (AVE = 0.53; CR = 0.92) | | | |
| I consider whether products can express my own personality when I shop. | 0.835 | 0.713 | 0.605 |

Table 3. Cont.

| Factors and Items | UK | US | China |
|--|-------|-------|-------|
| Shopping Values | | | |
| I choose unique and differentiated products rather than general and simple ones. | 0.707 | 0.673 | 0.686 |
| When I choose products, it is important that the products are new and have never been seen before. | 0.738 | 0.754 | 0.736 |
| <i>Hedonic values (AVE = 0.51; CR = 0.83)</i> | | | |
| I spend much time to research in new products because I am interested. | 0.545 | 0.646 | 0.820 |
| When I purchase products, I like to fully look around various stores. | 0.735 | 0.809 | 0.547 |
| Shopping and looking around stores is an enjoyable pastime for me. | 0.731 | 0.701 | 0.777 |
| Consciousness of Sustainability | | | |
| <i>Pro-Environmentalism (AVE = 0.62; CR = 0.78)</i> | | | |
| We should decide to purchase products by considering the environmental consequence. | 0.907 | 0.896 | 0.798 |
| I think that we should buy eco-friendly products even though they cost a bit more. | 0.832 | 0.809 | 0.840 |
| Considering environmental problems, we should cut back on buying many clothes for one season. | 0.840 | 0.877 | 0.762 |
| <i>Social Responsibility (AVE = 0.63; CR = 0.72)</i> | | | |
| Sales of products made by child labor should be forbidden. | 0.649 | 0.645 | 0.777 |
| Protection of laborers in companies should be government-regulated. | 0.754 | 0.646 | 0.849 |
| Products that socially responsible companies offer should be marked with green consumption labels, so consumers can know this. | 0.808 | 0.823 | 0.544 |
| <i>Perceived Consumer Effectiveness (PCE) (AVE = 0.52; CR = 0.65)</i> | | | |
| It can be helpful to preserve our ecosystem that one person consumes by considering animal welfares. | 0.954 | 0.903 | 0.892 |
| The behavioral effort of one person can change a society. | 0.885 | 0.859 | 0.769 |
| It can be helpful for solving environmental problems that one person tells others about the seriousness of environmental damage. | 0.819 | 0.844 | 0.806 |
| <i>Environmental Knowledge of Apparel (EK) (AVE = 0.79; CR = 0.68)</i> | | | |
| Chemical detergents for washing apparel cause the water pollution. | 0.766 | 0.729 | 0.781 |
| The manufacturing process of synthetic or manufactured fibers such as polyester can cause environmental pollution. | 0.909 | 0.845 | 0.804 |
| Air pollution can occur during some common dyeing processes of textiles. | 0.893 | 0.868 | 0.819 |
| Product Criteria of SAP | | | |
| <i>Aesthetic Criteria (AVE = 0.75; CR = 0.68)</i> | | | |
| Designs of this product are important to me. | 0.967 | 0.872 | 0.930 |
| Colors of this product are important to me. | 0.893 | 0.887 | 0.883 |
| <i>Functional Criteria (AVE = 0.83; CR = 0.85)</i> | | | |
| Function of this product such as wrinkle free, anti-soil and durability is important me. | 0.819 | 0.754 | 0.884 |
| Easiness to care of this product is important to me. | 0.870 | 0.840 | 0.822 |
| The quality of this product is important to me. | 0.893 | 0.887 | 0.735 |
| <i>Sustainability Criteria (AVE = 0.80; CR = 0.86)</i> | | | |
| A non-harmful effect of this product on natures is important to me. | 0.913 | 0.811 | 0.804 |
| Social responsibility of the company which produces this product is important to me. | 0.871 | 0.871 | 0.807 |
| This product's contribution to animal welfare is important to me. | 0.852 | 0.823 | 0.819 |
| <i>Brand Criteria (AVE = 0.71; CR = 0.73)</i> | | | |
| Brand awareness of this product is important to me. | 0.935 | 0.626 | 0.732 |
| Brand image of this product is important to me. | 0.879 | 0.694 | 0.670 |
| <i>Behavioral Intention to SAP (BI) (AVE = 0.76; CR = 0.82)</i> | | | |
| I have an intention to use this product. | 0.977 | 0.962 | 0.915 |
| I have an intention to buy this product. | 0.931 | 0.950 | 0.870 |
| I have an intention to recommend this product to others. | 0.884 | 0.899 | 0.839 |

Note: standardized coefficients; all significant at $p < 0.001$; AVE = Average Variance Extracted; CR = Composite Reliability; CFI = Comparative Fit Index; TLI = Tucker-Lewis Index; NFI = Normed Fit Index; RMSEA = Root Mean Square Error of Approximation. Model Fit: $\chi^2 = 1487.421$, $df = 587$, $\chi^2/df = 2.534$, $p < 0.001$, CFI = 0.95, TLI = 94, NFI = 0.92, RMSEA = 0.04.

4.2. Testing for Measurement Invariance Across Countries

Measurement invariance was tested for configural and metric invariance across countries to ensure that the same measurement structures holds in each country that difference scores across items can be meaningfully compared [102]. Before exploring individual country differences, the cross-country measurement equivalence was tested. Before testing measurement invariance across three countries, confirmatory factor analyses were conducted for all three countries separately (see Table 2). The model fit was satisfactory in each country. After establishing the baseline models, a series of nested models testing several types of measurement invariance (from configural to factor covariance invariance) was conducted, employing multi-group confirmatory factor analyses.

Two of the measurement invariance structures were assessed because the impact of consumer characteristics factors and marketing perspective factors on behavioral intention of SAP was separately analyzed by SEM for testing the hypothesis. On examining the chi-square difference between a constrained versus an unconstrained model of both consumer characteristic determinants with behavioral intentions and marketing perspectives' determinants with a behavioral intention of SAP, it was discovered that results across the three countries reveal satisfactory support for configural and metric equivalence (see Table 4). Results suggest configural invariance indicating the constructs can be conceptualized in the same way across all three countries since the fit of the configural invariance model was good. We could also establish metric invariance (i.e., the factor loadings across countries were equal). These results provided a reasonable fit to the total data, and the estimated coefficients for each country could be validly analyzed to reveal the relationships by country for each construct. Consequently, the three groups of the sample validated invariance, which means the proposed model could assess the hypothesized relationships, and the moderating effect (country) could proceed [103].

Table 4. Measurement invariance for consumer characteristic and marketing perspective determinants.

| Measurement Invariance for Consumer Characteristic | Model Fit Measures | | | | | Model Differences |
|--|--------------------|-----------|----------|-------|-------|---------------------------|
| | χ^2 | <i>df</i> | <i>p</i> | RMSEA | CFI | $\Delta\chi^2(\Delta df)$ |
| Configural invariance | 1575.30 | 789 | 0.00 | 0.03 | 0.94 | - |
| Metric invariance | 1619.06 | 823 | 0.00 | 0.03 | 0.93 | 43.76(34) |
| Scalar invariance | 1815.49 | 913 | 0.00 | 0.03 | 0.93 | 240.19(124) *** |
| Factor covariance invariance | 2251.56 | 965 | 0.00 | 0.04 | 0.90 | 457.58(176) *** |
| Measurement Invariance for Marketing Perspective Factors | Model Fit Measures | | | | | Model Differences |
| | χ^2 | <i>df</i> | <i>p</i> | RMSEA | CFI | $\Delta\chi^2(\Delta df)$ |
| Configural invariance | 603.11 | 240 | 0.00 | 0.04 | 0.961 | - |
| Metric invariance | 620.94 | 260 | 0.00 | 0.04 | 0.961 | 17.83(20) |
| Scalar invariance | 836.74 | 290 | 0.00 | 0.05 | 0.941 | 233.63(50) *** |
| Factor covariance invariance | 1085.74 | 320 | 0.00 | 0.05 | 0.917 | 482.63(80) *** |

*** $p < 0.001$.

As this study assumed, four dimensions of shopping values, two dimensions of consciousness of sustainability, four dimensions of SAP product criteria, and a uni-dimension of PCE, EK, and behavioral intention of SAP were found. Discriminant validity was validated when the AVE between each pair of constructs was greater than Φ^2 (i.e., the squared correlation between two constructs) (see Table 5).

4.3. Testing Hypothesis

4.3.1. Effects of Consumer Characteristics and Marketing Perspective Determinants on Behavioral Intension of SAP

Structural equation modeling was conducted to test the hypothesized relationships (see Table 6). The structural model identified eight variables of consumer characteristics (i.e., four of shopping values, and two of consciousness of sustainability, perceived consumer effectiveness, environmental knowledge of apparel) and four variables of marketing

perspective determinants (i.e., aesthetics, functional, brand, and sustainable criteria of SAP) as exogenous latent constructs, while the behavioral intention of SAP was identified as an endogenous construct.

Table 5. Correlation of constructs.

| Variables | Shopping Values | | | | Sustainability Consciousness | | PCE | EK | Product Criteria | | | | BI |
|-----------|-----------------|----------|----------|----------|------------------------------|----------|----------|----------|------------------|----------|----------|----------|------|
| | SV | UV | DV | HV | PE | SR | | | AC | FC | BC | SC | |
| SV | 1.00 | | | | | | | | | | | | |
| UV | 0.122 ** | 1.00 | | | | | | | | | | | |
| HV | 0.482 ** | 0.450 ** | 1.00 | | | | | | | | | | |
| DV | 0.334 ** | 0.547 ** | 0.538 ** | 1.00 | | | | | | | | | |
| PE | 0.176 ** | 0.518 ** | 0.462 ** | 0.447 ** | 1.00 | | | | | | | | |
| SR | −0.03 | 0.361 ** | 0.180 ** | 0.235 ** | 0.428 ** | 1.00 | | | | | | | |
| PCE | 0.260 ** | 0.412 ** | 0.432 ** | 0.416 ** | 0.648 ** | 0.375 ** | 1.00 | | | | | | |
| EK | 0.113 ** | 0.427 ** | 0.330 ** | 0.390 ** | 0.575 ** | 0.462 ** | 0.590 ** | 1.00 | | | | | |
| AC | 0.272 ** | 0.410 ** | 0.486 ** | 0.427 ** | 0.411 ** | 0.408 ** | 0.393 ** | 0.461 ** | 1.00 | | | | |
| FC | 0.204 ** | 0.455 ** | 0.418 ** | 0.424 ** | 0.401 ** | 0.453 ** | 0.413 ** | 0.485 ** | 0.765 ** | 1.00 | | | |
| SC | 0.401 ** | 0.275 ** | 0.459 ** | 0.426 ** | 0.387 ** | 0.261 ** | 0.366 ** | 0.382 ** | 0.472 ** | 0.422 ** | 1.00 | | |
| BC | 0.134 ** | 0.462 ** | 0.409 ** | 0.421 ** | 0.659 ** | 0.474 ** | 0.606 ** | 0.575 ** | 0.523 ** | 0.582 ** | 0.486 ** | 1.00 | |
| BI | 0.237 ** | 0.360 ** | 0.386 ** | 0.422 ** | 0.579 ** | 0.330 ** | 0.541 ** | 0.468 ** | 0.504 ** | 0.532 ** | 0.408 ** | 0.619 ** | 1.00 |

SV = Social Value; UV = Utilitarian Value; DV = Differential Value; HV = Hedonic Value; PE = Pro-Environmentalism; SR = Social Responsibility; PCE = Perceived Consumer Effectiveness; EK = Environmental Knowledge of Apparel; AC = Aesthetic Criteria; FC = Functional Criteria; BC = Brand Criteria; SC = Sustainability Criteria; BI = Behavioral Intention of SAP; ** $p < 0.01$.

Table 6. Structural model results.

| Hypothesis and Independent Variables | All Countries | | |
|--|---------------|------|----------|
| | β | SE | CR |
| H1: Social shopping value brand resonance e U.t the country image-brand resonance model would facilitate consumers' | 0.04 | 0.03 | 0.94 |
| H2: Utilitarian shopping value | −0.18 | 0.10 | −2.60 ** |
| H3: Differential shopping value | −0.15 | 0.10 | −1.90 |
| H4: Hedonic shopping value brand resonance e U.t the country image-brand resonance model would facilitate consumers' | 0.24 | 0.10 | 2.18 ** |
| H5: Pro-Environmentalism consciousness | 0.39 | 0.09 | 5.07 *** |
| H6: Social responsibility consciousness | 0.13 | 0.10 | 1.06 |
| H7: Perceived consumer effectiveness | 0.18 | 0.06 | 1.98 ** |
| H8: Environmental knowledge | 0.07 | 0.07 | −1.26 |
| H9: Aesthetic product criteria | 0.05 | 0.11 | 0.65 |
| H10: Functional product criteria | 0.30 | 0.14 | 3.22 ** |
| H11: Sustainability product criteria | 0.22 | 0.10 | 2.72 ** |
| H12: Brand product criteria | 0.04 | 0.10 | 0.52 |

Dependent variable = Behavioral intention to buy SAP; Notes: β , the path coefficient.; SE, standard error; CR, critical ratio; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

The hypothesized structural model to test impact of consumer characteristic determinants (shopping values, consciousness of sustainability, perceived consumer effective, environmental knowledge of apparel) generated a good fit ($\chi^2(df) = 861.11(90)$, CFI = 0.95, GFI = 0.92, NFI = 0.93, RMSEA = 0.05). H1 to H4 tested whether four shopping values (social, H1; utilitarian, H2; differential, H3; hedonic, H4) positively affected behavioral intention of SAP. Hedonic ($\beta = 0.24$, $p < 0.01$) and utilitarian ($\beta = -0.18$, $p < 0.01$) values strongly affected behavioral intention of SAP, while there was no significant effect of social and differential values on behavioral intention. Thus, H4 was supported, indicating that consumers who valued hedonic shopping behaviors clearly tended to have positive behavioral intention of SAP. We assumed that the utilitarian shopping value would have a positive effect on sustainable behavioral intentions, but H2 was not supported, indicating consumers who valued utilitarian shopping tended to have negative behavioral intention of SAP. H5 and H6 tested whether consciousness of sustainability had positive influences on behavioral intention of SAP (pro-environmentalism, H5; social responsibility, H6). The effect of pro-environmentalism ($\beta = 0.39$, $p < 0.001$) on behavioral intention of SAP was

significant, while social responsibility had no significant influence on behavioral intention; therefore, H5 was supported, but H6 was not supported. H7 and H8 tested whether perceived effectiveness of consumer and environmental knowledge of apparel had a positive effect of on behavioral intension of SAP, respectively. The effects of perceived consumer effectiveness ($\beta = 0.18, p < 0.01$) significantly had a positive effect on behavioral intention to buy SAP, but the effect of environmental knowledge of apparel on behavioral intention to buy SAP was not significant; therefore, H7 was supported and H8 was rejected.

The hypothesized structural model to test impact of marketing perspective determinants generated a good fit ($\chi^2(df) = 199.46(55)$, CFI = 0.98, GFI = 0.96, NFI = 0.97, RMSEA = 0.06). H5 examined the positive effect of evaluation criteria of SAP (aesthetics, H9; functional, H10; sustainable, H11; brand, H12) on behavioral intention to buy SAP. Two paths from the functional and sustainable criteria to behavioral intention of SAP were significant. Functional ($\beta = 0.30, p < 0.01$) and sustainable ($\beta = 0.22, p < 0.01$) positively affected behavioral intention to buy SAP. H10 to H11 were supported, suggesting that functional and sustainable criteria to evaluate SAP are important to improve the behavioral intention toward SAP.

4.3.2. Country Differences in Means of Shopping Values, Consciousness of Sustainability, PCE, EK, Criteria of SAP, and Behavioral Intention

To test differences in means of shopping values, consciousness of sustainability, perceived consumer effectiveness, environmental knowledge of apparel, SAP criteria, and behavioral intention to buy SAP among three countries (Hypothesis 13), one-way analyses of variance (ANOVA) were conducted (see Table 7). The results of ANOVA indicated that there are significant differences in all consumer characteristics proposed by this study except environmental knowledge of apparel across three countries. The US respondents were demonstrated to have higher utilitarian and hedonic values, pro-environmentalism, and PCE than other countries. Chinese respondents showed higher social and differential values and social responsibility than other groups.

Table 7. Analyses of variance (ANOVA) results predicting country differences in research variables.

| Dependent Variables | | UK (N = 256) | | US (N = 230) | | China (N = 225) | | F-Value | Total (N = 711) | |
|------------------------------------|-----------------------|-----------------|------|-----------------|------|--------------------|------|------------|--------------------|------|
| | | Mean | S.D. | Mean | S.D. | Mean | S.D. | | Mean | S.D. |
| Shopping values | Social | 3.95b | 1.72 | 4.15ab | 1.65 | 4.21a | 1.57 | 3.987 * | 4.25 | 1.61 |
| | Utilitarian | 5.55b | 0.85 | 5.79a | 0.89 | 5.63b | 0.99 | 6.023 * | 5.66 | 0.90 |
| | Differential | 4.84c | 1.17 | 5.17a | 1.10 | 5.26a | 1.11 | 13.484 *** | 5.16 | 1.12 |
| | Hedonic | 5.19b | 1.07 | 5.47a | 1.12 | 5.16b | 1.13 | 10.786 *** | 5.35 | 1.08 |
| Consciousness of sustainability | Pro-environmentalism | 5.22b | 1.16 | 5.54a | 1.16 | 5.29b | 1.16 | 4.604 * | 5.38 | 1.15 |
| | Social responsibility | 6.06ab | 0.97 | 5.99b | 0.92 | 6.27a | 1.70 | 4.141 * | 6.06 | 0.97 |
| Perceived consumer efficiency | | 5.08b | 1.13 | 5.40a | 1.12 | 5.09b | 1.21 | 4.821 ** | 5.16 | 1.15 |
| Environmental knowledge of apparel | | 5.38 | 1.00 | 5.52 | 0.99 | 5.47 | 1.09 | 1.093 | 5.47 | 1.01 |
| Product criteria of SAP | Aesthetic | 5.63b | 1.04 | 5.70ab | 1.06 | 5.98a | 1.04 | 4.268 * | 5.80 | 1.04 |
| | Functional | 5.75b | 0.92 | 5.96a | 0.84 | 5.94a | 1.01 | 3.984 * | 5.88 | 0.92 |
| | Sustainable | 5.63b | 1.11 | 5.83ab | 0.94 | 5.85a | 0.99 | 3.314 * | 5.13 | 1.29 |
| | Brand | 4.73c | 1.41 | 5.02b | 1.33 | 5.50a | 1.07 | 17.667 *** | 5.73 | 1.03 |
| Behavioral intention to SAP | | 5.20b | 1.27 | 5.52a | 1.26 | 5.44a | 1.15 | 4.705 ** | 5.41 | 1.23 |

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; Duncan test results (a > b > c); SAP = sustainable apparel products.

ANOVA results of SAP criteria indicated there are significant country differences for all four factors. For aesthetic criteria, Chinese' scores were higher than Western. For functional criteria, respondents in the US and China had higher scores than those in the UK. A result of ANOVA for predicting effects of cultures on Sustainable criteria reveal that Chinese samples showed the highest scores. Looking at overall means of SAP criteria across countries, both the UK and US respondents tended to consider functional and sustainable criteria valuable than aesthetic and brand criteria. The Chinese group considered all of criteria including aesthetic, functional, sustainable, and brand criteria important. For

behavioral intention to buy SAP, three countries showed positive intention to SAP. The mean of behavior intentions toward SAP for the full sample is 5.41 and is lowest in UK (M = 5.2) and is highest in the US (M = 5.52) followed by China (M = 5.44).

4.4. The Structural Model: Country Differences

The effect of determinants on behavioral intentions toward SAP were tested across countries (UK, US, China) using SEM (see Table 8). Overall model fit for all models is good, with CFI, RMSEA, and GFI falling within the proposed cutoffs suggested by Hu and Bentler [101]. Following these guidelines, all models provide at least a satisfactory model fit.

Table 8. Structural model results: country comparison.

| Hypothesis and Independent Variables | Country Differences (H14) | | | | | | | | |
|---|---------------------------|------|----------|---------|------|----------|---------|------|--------|
| | UK | | | US | | | China | | |
| | β | SE | CR | β | SE | CR | β | SE | CR |
| H1: Social value brand resonance e U.t the country image-brand resonance model would facilitate consumers' | 0.06 | 0.05 | 0.71 | 0.04 | 0.06 | 0.50 | 0.04 | 0.08 | 0.36 |
| H2: Utilitarian value | 0.06 | 0.17 | 0.55 | 0.01 | 0.18 | 0.09 | 0.05 | 0.20 | 0.34 |
| H3: Differential Value | 0.02 | 0.14 | 0.314 | 0.40 | 0.16 | 3.45 *** | 0.04 | 0.22 | 0.27 |
| H4: Hedonic Value brand resonance e U.t the country image-brand resonance model would facilitate consumers' | 0.49 | 0.25 | 3.10 ** | 0.14 | 0.13 | 1.37 | 0.51 | 0.26 | 2.13 * |
| H5: Pro-Environmentalism | 0.61 | 0.12 | 6.47 *** | 0.30 | 0.12 | 2.94 ** | 0.14 | 0.11 | 1.26 |
| H6: Social Responsibility | 0.08 | 0.13 | 1.05 | 0.12 | 0.16 | 1.23 | 0.15 | 0.17 | 1.23 |
| H7: PCE | 0.03 | 0.08 | 0.49 | 0.36 | 0.14 | 2.99 ** | 0.44 | 0.11 | 3.72 |
| H8: EK | 0.08 | 0.11 | 1.12 | -0.09 | 0.14 | -0.90 | 0.04 | 0.14 | 0.30 |
| H9: Aesthetic Criteria | 0.06 | 0.12 | 0.61 | 0.07 | 0.22 | 0.46 | 0.06 | 0.56 | 1.25 |
| H10: Functional Criteria | 0.17 | 0.17 | 1.57 | 0.14 | 0.24 | 1.21 | 0.25 | 0.69 | 1.97 * |
| H11: Sustainability Criteria | 0.42 | 0.08 | 6.18 * | 0.43 | 0.16 | 3.92 *** | 0.57 | 0.21 | 2.97 |
| H12: Brand Criteria | 0.17 | 0.09 | 2.17 * | 0.35 | 0.22 | 2.00 * | 0.23 | 0.16 | 1.65 |

Dependent variable = Behavioral intention of SAP; Notes: β , the path coefficient.; SE, standard error; CR, critical ratio; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; Metric invariant structural model fit of consumer characteristics effects: $\chi^2(df) = 1811.36(234)$, CFI = 0.93, GFI = 0.85, NFI = 0.87, RMSEA = 0.03; Metric invariant structural model fit of marketing perspective effects: $\chi^2(df) = 435.918(92)$, CFI = 0.97, GFI = 0.92, NFI = 0.94, RMSEA = 0.04.

4.4.1. Cultural Differences in Effects of Consumer Characteristic Determinants (Shopping Values, Consciousness of Sustainability, PCE, EK) on SAP Behavioral Intention

To investigate the moderating effect of country, multigroup SEM was conducted. Testing for the invariant structure among three countries was necessary before testing for multigroup SEM. The unconstrained model assumed that the invariance had the same factors and path pattern in the three country estimations. The fit of the unconstrained model was satisfactory ($\chi^2(df) = 1764.68 (270)$, CFI = 0.93, GFI = 0.86, NFI = 0.86, RMSEA = 0.03), with statistically significant t -value regarding factor loadings exceeding 0.60. The full invariance model was tested by constraining the metric of factor loading (measurement weight) to be invariant across the three countries. There were no significant differences in the chi-square ($\Delta\chi^2(\Delta df) = 46.68 (36)$, $p > 0.05$) between the unconstrained model and the measurement weight-constrained model ($\chi^2(df) = 1811.36 (234)$, CFI = 0.93, GFI = 0.85, NFI = 0.87, RMSEA = 0.03). Hence, the metric invariance was supported, and the three countries' structural models were assumed to be invariant.

On validation of the invariance of the SEM, multigroup SEM was completed to compare the hypothesized relationships among the UK, American, and Chinese consumer groups (see Table 5). For the UK and China, hedonic shopping values significantly lead to behavioral intention to buy SAP (UK, $\beta = 0.49$; China, $\beta = 0.51$). In comparison, for the US, differential shopping value ($\beta = 0.40$) significantly leads to behavioral intention to buy SAP (see Table 8). The UK group showed that pro-environmentalism ($\beta = 0.61$) had a significant effect on BI and the Chinese group showed that perceived consumer effectiveness ($\beta = 0.44$) had a significant effect of BI. Both pro-environmentalism ($\beta = 0.30$) and perceived consumer effectiveness ($\beta = 0.36$) had a significant influence on BI for the US group. The UK consumers showed the BI stemming from hedonic shopping value and pro-environmentalism. The hedonic shopping orientation and pro-environmentalism can enhance positive behavioral intention to buy SAP in the UK market. The variables that contributed significantly to support for SAP purchase intention in the US were differential shopping value, pro-environmentalism, and PCE. In China, PCE and hedonic shopping value and PCE were significant predictors of SAP behavioral intention.

4.4.2. Cultural Differences in Effects of Marketing Perspective Determinants on SAP Behavioral Intention

Multigroup SEM was employed to predict the effect of evaluation criteria when people buy SAP, marketing perspective factors, on SAP behavioral intention within each country (see Table 8). The fit of the unconstrained model was satisfactory ($\chi^2(df) = 418.71 (108)$, CFI = 0.97, GFI = 0.92, NFI = 0.95, RMSEA = 0.04), with statistically significant *t*-value regarding factor loadings exceeding 0.60. The full invariance model was tested by constraining the metric of factor loading (measurement weight) to be invariant across the three countries. There were no significant differences in the chi-square ($\Delta\chi^2(\Delta df) = 17.20 (16)$, $p > 0.05$) between the unconstrained model and the measurement weight-constrained model ($\chi^2(df) = 435.918 (92)$, CFI = 0.97, GFI = 0.92, NFI = 0.94, RMSEA = 0.04). Hence, the metric invariance was supported, and the three countries' structural models were assumed to be invariant.

In both the UK and the US, sustainable (UK, $\beta = 0.42$; US, $\beta = 0.43$) and brand (UK, $\beta = 0.17$; US, $\beta = 0.35$) criteria were significant determinants of behavioral intention to buy SAP whereas in China, the only sustainable criterion ($\beta = 0.57$) was the significantly influencing factors on behavioral intention to SAP. This means that sustainable criteria such as pro-environmental, animal welfare, and social responsibility of SAP can improve the positive behavioral intention to buy SAP in China, whereas brand criteria such as a good brand image and reputation as well as sustainable criteria can encourage positive behavioral intention to buy SAP in both UK and US. For three countries, sustainable criteria among production evaluation of SAP revealed a crucial determinant to buy or use SAP, and other product criteria were different across countries.

In sum, the country difference significantly moderates proposed relationships, in which the US group has advanced the sustainable apparel consumption intention through differential shopping values, pro-environmentalism by means of the systemic route of the decision-making process, whereas the UK and the China groups reveal a hedonic shopping values as the motivating factors of sustainable apparel consumption. Nevertheless, in terms of important criteria of SAP, both the UK and the US samples think brand criteria such as good brand images and a high reputation of a brand are more important during the making of sustainable buying decision. The Chinese group tended to be more conscious of functional criteria when they buy sustainable apparel products. All country groups tended to consider sustainable criteria of apparel products critical, and this motivating factor revealed to play a more important role in behavioral intention to SAP among countries.

5. Discussion

Our goal was to arrive at a sustainable apparel consumption construct in the UK, the US, and Chinese markets. This study identifies consumer characteristics and marketing perspective determinants of behavioral intention of SAP and examines the moderating

effects of country differences. The dimensionality of the proposed framework is identified with four dimensions of shopping values, two dimensions of sustainability-consciousness, four dimensions of product criteria of sustainable apparel, and the one-dimension of perceived consumer effectiveness, environmental knowledge of apparel separately, and behavioral intention to buy SAP.

Results indicate that hedonic and utilitarian values strongly affected behavioral intention to buy SAP, while there was no significant effect of social and differential values on behavioral intention. We believed that the utilitarian shopping value would have a positive effect on sustainable behavioral intentions, however, it had a negative effect on behavioral intention to buy SAP. This indicates consumers who valued utilitarian shopping tended to have negative behavioral intention to buy SAP and consumers who valued hedonic shopping behaviors clearly tended to have positive behavioral intention to buy SAP. That is, when consumer purchase sustainable apparel products, they consider sensory pleasure to be more important than practical benefits. Jung et al. [96] argued that sustainable consumption behavior will take place only if there are no expenses to the consumer regarding higher price, lower quality, or inconvenience. In this survey the similar patterns can be witnessed. Consumers desire to acquire hedonic shopping motivation but the negative influence of utilitarian shopping values is intriguing regarding creating a marketing strategy for SAP. The more practical shopping value consumers pursue, the more reluctant they are to act (i.e., buying or using SAP), which may be due to the consumer stereotype that sustainable products will be impractical [54]. It is also important to target consumers who engage in a pleasant and entertaining shopping experience based on the results of the study, but also to improve the functionality, quality, and value of the sustainable apparel product so that sustainable clothing products can be perceived as practical.

The effect of pro-environmentalism on behavioral intention of SAP was significant, while social responsibility had no significant influence on the behavioral intention of SAP. The effects of perceived consumer effectiveness significantly had a positive effect on behavioral intention to SAP, but the effect of environmental knowledge of apparel on behavioral intention of SAP was not significant. Social responsibility and perceived consumer effectiveness motivate behavioral intention to buy SAP. All paths from the four criteria to behavioral intention to buy SAP were significant. Aesthetics, functional, sustainable and brand positively affected behavioral intention of SAP, which suggest that aesthetics, functional, sustainable, and brand criteria to evaluate SAP are important to enhance the behavioral intention toward SAP.

This research validates the country differences in the proposed framework among the UK, the US, and China, suggesting the necessity of differential and reflexive marketing tactics regarding three countries. The discrepancies and similarities across three countries are identified. Both UK and Chinese consumers are actively motivated by hedonic shopping values to increase their positive behavioral intention to buy SAP, while US consumers use differential shopping values when they have the intention to buy SAP. In an evaluation of sustainable apparel product criteria, the UK and the US consumers tend to consider brand criteria to be more important, while the Chinese consumers tend to put more importance on functional criteria. While the criteria that are valued as important in purchasing sustainable clothing products vary depending on the Eastern and the Western cultures, the sustainable criteria have been recognized as an important requirement in common for all countries when consumers have the intention to buy, use, or recommend SAP to others. The results in this study propose several insights about the differences in sustainable consumption that may exist among different countries and may help global firms in executing a sustainable apparel business across countries. When communicating with consumers in different countries, marketing managers should also consider the differences in shopping values, sustainable consciousness such as pro-environmentalism, perceived consumer effectiveness, and product criteria as those determinants could be enablers or barriers in sustainable consumption in those countries.

6. Conclusions and Implication

With the growing social, political, and ethical pressures, many companies embraced the concept of sustainability in marketing strategies for their businesses [104,105]. However, some recent surveys found that even when consumers showed a high level of sustainable concern, they still place their own needs and preferences as the priority when buying products [54]. Therefore, companies must first define motivators of consumers' sustainable consumption behaviors and then apply the concept of sustainability into marketing strategies. The main aims of this study are to examine the consumer segments' encouraging determinants of willingness to buy, use or recommend the sustainable apparel products. This study identified different consumer segments across three countries including the UK, the US, and China due to the lack of sustainable apparel consumption research with the approach of cross-country comparison.

Three countries had different patterns in each score of consumer characteristics/marketing perspective factors and their effects on purchase intention to buy SAP. These results might come from the fact that consumers of three countries have different points of view on the sustainable products due to different cultural backgrounds. Findings demonstrate similarities or significant differences in determinants to encourage behavioral intention to buy sustainable apparel products among countries. Shopping values and product criteria highlight distinctly different patterns of behavioral intention to SAP among countries. Thus, advertisers and marketers who execute sustainable apparel fashion should be cautious in launching advertising and promotional plans to cover all countries. Instead, advertisers should target distinct sets of motives that apply to each country (e.g., targeting hedonic shopping values for the UK and China vs. differential shopping values for the US to promote sustainable fashion items).

China is the collectivist of the three countries surveyed. Chinese respondents were shown to be highly conscious of functionality when they evaluate criteria of sustainable apparel products. Interestingly, the UK and the US segments used brand criteria more importantly than respondents from China. Specifically, Chinese consumers devoted more effort towards evaluating products of high functionality and performance because they expect products to last [106]. Brands are symbols of status and prestige and Eastern cultures, having high power distance, perceive social status and prestige as important [79]. This is associated with the concept of 'face' and social harmony, and consumers in Eastern cultures are expected to have a higher need to maintain prestige and status, and thus a higher level of brand-conscious decision-making. Brands assist consumers in effort minimization and provide a perception of familiarity, and this diminishes the risk involved in purchasing [107] and appeals to consumers who have high uncertainty avoidance. However, brand criteria for consumers from the United States and the US also significantly lead to sustainable apparel purchases. It is particularly interesting that we assumed that China would place brand criteria as more important, but they would not. The research of Bao, Zhou and Su [108] lends support for this in their study on Chinese and American decision-making styles. Their results indicated that the Chinese were less brand conscious despite being a culture that places high emphasis on 'saving face'.

Perceived consumer effectiveness leads to sustainable apparel purchases for the US and China. PCE invokes self-actualization and behaviorism as its primary change mechanism, where rewards and punishments shape behavior. These findings have significant implications for advertising of sustainable apparel products. Advertisers involved in the sustainable apparel business should identify ways to reimburse consumers for undertaking the perception of consumer effectiveness themselves through participating in sustainable apparel purchases. This study has enhanced the understanding of the antecedents on both consumer and marketing sides to promote positive behavioral intention to buy sustainable apparel products such as buying, using, and recommending in three countries. Fashion companies who propose to step forward their sustainable fashion products globally may take into consideration the outcomes of this study while executing their marketing strategies.

The contribution of this study is that it has established a theoretical model as regards determinants that affect the consumer's behavioral intention to buy sustainable apparel products through several dimensions including shopping values, consciousness of sustainability, perceived consumer effectiveness, environmental knowledge of apparel, and evaluation criteria of sustainable apparel products. We suggest differentiated marketing strategies for SAP targeting global consumers. Both Western and Eastern consumer groups have positive behavioral intentions toward SAP, and this means the positive marketability of the sustainable apparel industry. This study has enhanced the understanding of the antecedents on both consumer and marketing sides to promote positive purchase intention to buy sustainable fashion products in Western and Eastern countries. Fashion companies who plan to move forward sustainable fashion products globally may take into consideration the findings of this study while drawing up their marketing strategies.

7. Limitation and Future Research

The limitations of this study can suggest several further research directions. First, this study did not analyze the samples according to their age, social, or income level factors, therefore, emphasis should be assigned to the differences in behavioral intention to buy SAP and determinants among consumers from different genders, ages, and financial levels in a future study. This research has focused on the general apparel products and, therefore, in future, differences between apparel and other product categories or the application of sustainability into smart clothing due to the innovative technology [109] can be examined based on this research model. Additionally, this study carried out quantitative research using an online survey without any in-depth discussion among respondents, so in further research a qualitative methodology such as in-depth interviews or focus group interviews can be conducted.

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