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A Confirmatory Model for Sustainability of Apparel Brands and Its Impact on Brand Outcomes

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Abstract *The existing research on sustainability in the apparel industry provides no clear consensus on the definition of sustainability for the apparel brands and how sustainability of apparel brands as it is perceived by consumers can be measured. To fill this gap in research, the present study proposes and tests a confirmatory model of sustainability for apparel brands based on the three pillars of sustainability (i.e., economic, environmental, social sustainability) theorized in the Triple Bottom Line model. A survey of 754 U.S. consumers provided data for empirical testing. The results support the three-dimensional factor structure of sustainability for apparel brands and reveal that a second-order sustainability exerts a significant impact on both brand image and brand trust. The findings provide theoretical implications for researchers and practical managerial suggestions for marketers.*

Key words *Sustainability, Triple Bottom Line Model, Confirmatory Model, Second-Order Construct, Apparel Business*

Introduction

> ... "Sustainability" is not a buzzword in the mind's eye of business leaders ... Sustainability has to be defined, embraced, and enacted by everyday citizens and consumers if it is to have a shot at capturing the mind and spirit of this generation, and being a value that transcends time and place to have long term impact (Coleman, 2012, para 4).

The academic research on sustainability in the textiles and apparel industry has been scattered across multiple topics from the use of organic cotton to the corporate social responsibility of apparel firms. While often defined in many different ways, the most widely used definition of sustainability is "meeting the needs of the present without compromising the ability of future generations to meet their own needs" (Brundtland, 1987, p. 43). Further, a contemporary form of sustainability is a more comprehensive concept than its precursor, which mainly focused on environmentalism, in that it notes three dimensions,

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namely, the economic, environmental, and social sustainability (Elkington, 1998). Establishing these three core dimensions, often called the triple bottom line (TBL), was a result of the recognition that "we can no longer think of environment and economic and social development as isolated fields" (International Institute for Sustainable Development, n.d., para 2) and must, therefore, develop a value chain that is economically viable, environmentally sound, and socially responsible.

Although the rapid growth of ethical consumerism and firm sustainability practices have intrigued the interests of many researchers, the current literature in the area of sustainability in the apparel industry is still limited in several respects. First, the conceptual definition of sustainability for either the apparel companies or the brands remains still elusive. In fact, multiple similar terms, such as eco, slow, green, and ethical, are often interchangeably used in many research articles. Thus, beyond using vague terms, a solid theoretical account and an empirical measurement of sustainability in the context of apparel brands is still needed. Second, limited research recognizes that sustainability is multifaceted as reflected by the TBL model (i.e., economic, environmental, and social sustainability) (Elkington, 1998). With a few exceptions (e.g., Hanss & Böhm, 2012; Schmitt & Renken, 2012), many apparel studies have focused on one or two aspects of sustainability; thus, the solution provided in these studies often reflects only a partial picture of sustainability. Hence, a more comprehensive notion of sustainability is needed to offer an overarching concept that both grasps and defines the fundamental criteria of sustainability.

The current study fills these gaps in the literature by proposing and testing a confirmatory model that can measure the sustainability of apparel brands as perceived by consumers. It is a model based on the three pillars of sustainability theorized in the TBL model. While the TBL model can be applied to many industry sectors, the model is particularly relevant to the apparel industry where poor working conditions are endemic, and the environmental impacts of both is products and processes are high (Bly, Gwozdz, & Reisch, 2015; Caniato, Caridi, Crippa, & Moretto, 2012). This study contributes to the current literature by exploring the applicability of the TBL framework to the consumers' perceptions of sustainability for apparel brands and furthers the understanding of the nomological network of sustainability for apparel brands by examining the factorial validity of a second-order model of sustainability. In using the TBL model, this study takes a customer-centric approach to sustainability in which a brand's sustainability strategies directly focus on consumers (Sheth, Sethia, & Srinivas, 2011). This study will therefore address the following research questions: Do consumers perceive the three dimensions of sustainability (i.e., economic, environmental, social sustainability) distinctively when they evaluate an apparel brand's sustainability? If so, what are the sub-components within each dimension, and how is each component weighted in the mind of the consumer?

The remainder of this paper is organized as follows: First, it presents a brief review of the literature on sustainability and the TBL model within the context of apparel brands. Based on the customer-centric approach to sustainability, which serves as the framework of this study, it then develops research hypotheses to suggest a confirmatory model of sustainability as well as a structural model of sustainability for further testing the predictive validity of the TBL model. Next, the discussion describes the

research design and methodology of the study and presents results of an empirical analysis. The paper concludes by detailing the implications of the study for future research and management practice.

Literature review and Hypotheses development

Triple Bottom Line (TBL) Sustainability in the Apparel Industry

In proposing long-term environmental strategies for achieving sustainable development, the Brundtland Report (also known as *Our Common Future*), which was published in 1987 by the United Nation's (UN) WCED, recognizes the importance of assessing the issues related to the environment and development with regard to the interaction of three key elements: Environmental stewardship (Environment), economic growth and profit (Economy), and social welfare (Equity) (Edwards, 2005), also called 3Es. The inter-relationships between the three elements of sustainable development were later expanded in a business context by several researchers. The TBL, as proposed by Elkington (1998), is one of those models that incorporate the 3Es into actual business performance. The basic argument of the TBL is that businesses should look not only at the traditional measures of profits ("bottom line" or the accounts of profit and loss for their businesses) but also consider the measures of social and environmental performances ("triple bottom line") (Elkington, 1998). Since its publication, the philosophy and practice suggested in the TBL framework have been reviewed by many firms, and indeed, the business community has produced a significant improvement in sustainability initiatives, especially in the last decade (KPMG, 2013). However, industry reports do reveal that many companies are still not taking a proactive approach toward developing sustainability (Bonini, 2010) but have taken a limited approach to it, often addressing only environmental sustainability (Plieth, Bullinger, & Hansen, 2012). To address these limitations of sustainability initiatives, a stakeholder perspective has been suggested wherein firms integrate stakeholder expectations into their business actions and thereby resolve the different perspectives on sustainability issues and outcomes (Kozlowski, Bardecki, & Searcy, 2012).

Stemming from stakeholder theory, the customer-centric sustainability (CCS) focuses on customers, one of the most important stakeholders, and attempts to address several deficiencies in the current sustainability strategies (e.g., not taking a holistic approach to sustainability, not recognizing the threats from overconsumption as unsustainable consumption) (Sheth et al., 2011). Researchers argue that for companies to make sustainability an integral part of business strategy and operations, sustainability outcomes must be a result from consumer-directed business actions. Several other researchers also made similar points in their consumption-based view of sustainability. For instance, Málovics, Csigéné, and Kraus (2008) maintain that sustainability requires not only efforts in the business sector but also those efforts from consumers such as their reduced consumption. Hence, from a CCS perspective, sustainability can be achieved not merely through companies' efforts but also through the mutual effort of both companies and consumers.

A Confirmatory Model of Sustainability

To answer the first research question (i.e., "do consumers perceive the three dimensions of sustainability distinctively when evaluating an apparel brand's sustainability?"), this study proposes and tests a confirmatory model of sustainability based on the three dimensions of sustainability (i.e., economic, environmental, social sustainability) theorized in the TBL model (Elkington, 1998). Recognizing the multi-dimensional nature of sustainability, this study further proposes the concept of sustainability for apparel brands as a higher-order construct that is measured reflectively by the three first-order dimensions of economic, environmental, and social sustainability. The following are the specific hypotheses related to the factor structure for sustainability of apparel brands proposed in this study.

Economic sustainability of apparel brands. Researchers argue that the economic dimension of sustainability in businesses should reflect not only a firm's financial profitability but also consumers' economic well-being and standard of living (Donaldson & Preston, 1995; Huang & Rust, 2011; Sheth et al., 2011). In explaining the CCS view of sustainability, Cronin, Smith, Gleim, Ramirez, and Martinez (2010) contend that companies' efforts to improve the well-being of consumers does not conflict with increasing their financial profits and indeed can increase market share. For instance, companies implementing CCS and facilitating sustainable consumption instead of merely encouraging overconsumption can avoid hidden costs of business, such as the cost of producing too much of a variety of merchandise and doing wasteful advertising (Sheth et al., 2011). In this perspective, economic sustainability from the CCS perspective relates to the economic well-being of consumers. In the context of apparel brands, when consumers perceive that a brand offers quality products that help economize consumers' monetary and material resources, they may evaluate that brand as economically sustainable because the brand can then enhance their own economic well-being by facilitating sustainable consumption (e.g., preventing repetitive consumption) (Sheth et al., 2011). In fact, the quality of products has been identified as one of the key elements of economic sustainability in several studies (e.g., Hanss & Böhm, 2012; McNeill & Moore, 2015). Therefore, this study proposes that the economic sustainability of apparel brands reflects *the consumer's perception of the extent to which a brand offers quality products that help the consumer achieve sustainable consumption*, and is a distinct sub-dimension of the overall sustainability of apparel brands. Further, these brands must help consumers improve economic well-being (i.e., achieving sustainable consumption) by offering quality products that help economize consumers' monetary and material resources. Thus, the following hypothesis is developed:

H1a: Economic sustainability of apparel brands is a distinct sub-dimension of the overall sustainability of those apparel brands.

Environmental sustainability of apparel brands. In the apparel industry, environmental sustainability is mainly concerned with whether apparel products are made of environmentally sustainable materials and produced and distributed with minimum effects impacting the environment (Caniato et al., 2012). Significant issues relating to the environmental impact of apparel businesses include wastewater emissions

during manufacturing, solid waste production due to the inability of textiles to be recycled, and depletion of resources that result from apparel consumption (Kozlowski et al., 2012). Consumers have increasingly become aware of the environmental damage that has resulted from apparel businesses and started to perceive that the ecological aspect of sustainability is one of the most important facets of the overall sustainability of apparel brands. Thus, environmental sustainability of apparel brands is associated with *the consumer's perception of the extent to which a brand makes a positive impact of products and business processes on the ecological environment*, and is proposed as a distinct sub-dimension to explain the overall sustainability of apparel brands. The following hypothesis is developed:

H1b: Environmental sustainability of apparel brands is a distinct sub-dimension of the overall sustainability of those apparel brands.

Social sustainability of apparel brands. In the apparel industry, social sustainability often relates to such issues as sweatshops, child labor, and poor working conditions during the manufacturing phase (Fulton & Lee, 2013). Industry reports indicate that the current apparel companies' commitment to transparent business and fair trade does not live up to the consumers' expectation (Minney, 2015). With this increased need for social sustainability, consumers nowadays demand more than a brand's CSR claims, which often fail to convince of a brand's genuine motives. Instead, they require greater efforts by the brand to integrate social sustainability into their standard business practices (Stern, 2007). Indeed, the social aspect of sustainability has today become one of the central facets of apparel brand sustainability (Porter & Kramer, 2011). Thus, the social sustainability of apparel brands, that is, *the consumer's perception of the extent to which a brand practices ethical sourcing and promotes human rights*, is proposed as a distinct sub-dimension that helps explain the overall sustainability of apparel brands. The following hypothesis is thus developed:

H1c: Social sustainability of apparel brands is a distinct sub-dimension of the overall sustainability of those apparel brands.

In sum, the three dimensions of sustainability suggested in the TBL model (i.e., economic, environmental, social sustainability) are central to understanding the sustainability of apparel brands as perceived by consumers. Further, the TBL model suggests that these three dimensions share an underlying theme, namely sustainability, further indicating the strong presence of a common higher-order factor. Thus, it is proposed that the sustainability of apparel brands is a multi-dimensional concept, as reflected by three latent constructs, namely, economic, environmental, and social sustainability conceptualized in Hypotheses 1a-c. Thus, the following hypothesis is developed:

H2: Sustainability of apparel brands has a hierarchical factor structure that includes three sub-dimensions of sustainability (i.e., economic, environmental, and social).

A Structural Model of Sustainability

While the nomological network of a consumer's perception of sustainability for apparel brands has yet to be fully explored, the literature provides ample evidence that sustainability of apparel brands as perceived by consumers positively influences consumers' attitude toward the brand and brand relationship. Researchers assert that integrating sustainability actions into corporate strategies can create brand trust and attitude, and purchase intention (Bhaduri & Ha-Brookshire, 2011; Kang & Hustvedt, 2014). In their case study of a firm that produces sustainable apparel products, Curwen, Park, and Sarkar (2012) find that the case company embraced the variety of challenges encountered in the development of sustainable products (e.g., variability of order quantities, higher cost) through creative thinking, flexibility, and knowledge sharing so as to support the company's sustainability objectives. These efforts in turn led to the positive business outcomes such as improved product quality, sustainable relationships with vendors, and increased sales. In their study of fair-trade and organic apparel companies, Schmitt and Renken (2012) identify the value of the 3Es created by the firms and demonstrate that achieving sustainable growth is best made possible through a shared value strategy (i.e., enhancing firm competitiveness while advancing the economic and social conditions in communities). Based on the literature, this study proposes that sustainability of apparel brands as perceived by consumers has a direct positive impact on two brand outcomes, brand image and brand trust. Thus, the following two hypotheses are also developed:

H3: Sustainability of apparel brands has a direct positive effect on perceived brand image.

H4: Sustainability of apparel brands has a direct positive effect on brand trust.

Method

Sample

The survey sample consisted of U.S. adult consumers (18 or older) who had purchased at least one of the sustainable fashion brands or fast fashion brands listed in the survey. A total of 754 respondents completed the survey. The ages of the respondents ranged from 18 to 50 and over, with 35.1% of the respondents aged 31-40, 22.9% of them aged 41-50, and 16.8% of them aged 51-60. About 68% of these participants were female, and the majority of respondents (82%) had attended some college or earned their Bachelor's or a higher degree of education. 75.6% of participants were white Americans. In addition, 22.9% of the respondents reported their average annual income as over $100,000, followed by $50,000 to $59,999 (12.7%) and $70,000 to $79,999 (9.9%).

Survey Procedure

Because all constructs of this study were brand-specific, participants were first asked to select one specific brand for their answers. For this purpose, a list of 15 apparel brands was presented in the beginning of the survey. These brands were in three brand categories: (a) those brands regarded as the best benchmark of sustainability commitments (i.e., sustainable fashion brands)[1], (b) those brands with a relatively

less sustainable image (i.e., fast fashion brands)[2], and (c) those brands in neither category. Sustainable fashion brands used in this study were *Patagonia*, *Eileen Fisher*, *TOMS*, *Loomstate*, *People Tree*, and *Edun*; while fast fashion brands included in the list were *H&M*, *Forever 21*, and *Zara*. Some examples of the third category were J.Crew, Polo, Levi's and Guess. The respondents were asked to choose *all* the brands they had previously purchased from this list. Only those respondents whose answers included one of the two brand categories (sustainable fashion or fast fashion brands) were allowed to proceed to the survey. Having sample brands in just these two categories had two benefits. First, compared to other brands, these brands helped the participants answer the questions on the brand's sustainability with more concrete ideas. Second, the choice ensured that the data will have sufficient enough variance in the level of consumers' perceptions of a brand's sustainability that is so central to this study.[3] After this screening procedure, the respondents were asked to select the *one* brand they had purchased or used most recently. By having the respondents use the brand most recently purchased when answering questions, we attempted to prevent any potential loss of recall of the respondents' experience with a brand. This brand was automatically embedded into the remaining questions pertaining to the brand.

Measures

Measures for most constructs were adopted from existing scales. However, since measurement items for the three sustainability dimensions did not exist, several items were developed or modified from different sources to fit the study context. For example, a list of attributes for ethical clothes as identified by Jä gel, Keeling, Reppel, and Gruber (2012) were modified. Initially modified by a single researcher, another researcher with expertise in apparel consumer research carried out a cross-check for whether the measures used were clear and theoretically consistent. Small revisions were then made to the final version of the questionnaire. Final measurement items are presented in Table 1.

Data Analysis Plan

To test the multi-dimensionality of sustainability (Hypothesis 1), two analyses were conducted. First, exploratory factor analysis (EFA) on the three dimensions of sustainability was conducted to examine the structure of the items. Then, confirmatory factor analysis (CFA) was performed to confirm the factor structure of the sustainability dimensions determined in EFA. To assess the hierarchical structure of the sustainability construct (Hypothesis 2), a second-order CFA was performed. Finally, to examine the impact of the second-order construct of sustainability on two dependent variables (Hypothesis 3-4), a structural model of sustainability containing sustainability outcome variables was evaluated and tested.

Table 1.
Measurement items and reliability of constructs

Construct	Measures	Source	Composite reliability
Economy	● [xyz]'s clothes are fit for purpose, hard-wearing, and durable. ● [xyz]'s clothes are soft, comfortable and provide a good fit. ● [xyz]'s clothes have good design and style. ● [xyz]'s clothes provide high quality in materials and stitching.	Jägel et al. (2012)	0.90
Environment	● [xyz] adopts environmentally friendly production practices. ● Toxic chemicals are not used in production by [xyz]. ● [xyz]'s clothes are produced with a minimum effect on the environment (e.g., no gases, low carbon foot print) and animals. ● [xyz]'s clothes are made from sustainable materials such as organic cotton and not be synthetic.	Jägel et al. (2012); Shen, Wang, Lo, & Shum (2012)	0.93
Equity	● [xyz] pays fair wage for factory workers and raw material suppliers. ● [xyz]'s products are made under safe and healthy working conditions, without child labor or sweatshops. ● [xyz] prefers local production of their clothing. ● [xyz] gives back to the communities in which it does business.	Jägel et al. (2012); Lichtenstein, Drumwright, & Braig (2004)	0.92
Brand image	● [xyz] makes an effort to improve customer satisfaction. ● The quality of [xyz] products is excellent. ● The products of [xyz] are trustful.	Ko, Hwang, & Kim (2013)	0.88
Brand trust	● [xyz] delivers what it promises. ● [xyz]'s product claims are believable. ● Over time, my experiences with [xyz] have led me to expect it to keep its promises, no more and no less. ● [xyz] has a name you can trust. ● [xyz] doesn't pretend to be something it isn't.	Erdem & Swait (2004)	0.99

Note. The name of a brand selected by an individual respondent was automatically embedded in [xyz].

Result

Test of the Three Dimensions of Sustainability for Apparel Brands

First, to evaluate the dimensionality of the measurement items, EFA using principle component analysis with Varimax rotation was conducted on the 17 measurement items for the three dimensions of sustainability. During the procedure, five items were eliminated due to their low factor loadings (less than .50) and cross-loadings with other factor items. One item ("[xyz]'s clothes was produced with a minimum effect on the environment (e.g., no gases, low carbon foot print) and animals"), which was cross-loaded with social sustainability (.512), was kept for environmental sustainability (.677) given its conceptual significance in measuring the environmental aspect of sustainability (Hair, Tatham, Anderson,

& Black, 2010). A clear three-factor model demonstrated in EFA supports the three dimensions of sustainability proposed in this study (see Table 2). Second, to further confirm the structure of the three sustainability dimensions, CFA was conducted on the final 12 items (see Figure 1). The model resulted in a good fit: $\chi^2(51) = 225.170$, $\chi^2/df = 4.415$, RMSEA = 0.07, CFI = 0.98, NFI = 0.97, TLI = 0.97. Therefore, each of the three sustainability dimensions was a distinct sub-dimension of the overall sustainability, thereby supporting H1a, H1b, and H1c.

Table 2.
Rotated component matrix of factor analysis

	Measurement items	Component		
		1	2	3
Economy	EC1: [xyz]'s clothes have good design and style.	.851	.117	.194
	EC2: [xyz]'s clothes are soft, comfortable and provide a good fit.	.810	.309	.230
	EC3: [xyz]'s clothes provide high quality in materials and stitching.	.753	.304	.369
	EC4: [xyz]'s clothes are fit for purpose, hard-wearing, and durable.	.701	.396	.335
Environment	EV1: Toxic chemicals are not used in production by [xyz].	.229	.784	.376
	EV2: [xyz] adopts environmentally friendly production practices.	.349	.719	.442
	EV3: [xyz]'s clothes are produced with a minimum effect on the environment (e.g., no gases, low carbon foot print) and animals.	.337	.677	.512
	EV4: [xyz]'s clothes are made from sustainable materials such as organic cotton and not be synthetic.	.398	.655	.451
Equity	EQ1: [xyz] prefers local production of their clothing.	.311	.315	.791
	EQ2: [xyz]'s products are made under safe and healthy working conditions, without child labor or sweatshops.	.279	.378	.778
	EQ3: [xyz] pays fair wage for factory workers and raw material suppliers.	.272	.386	.752
	EQ4: [xyz] gives back to the communities in which it does business.	.322	.424	.728

Test of Sustainability as a Higher Order Factor

To assess the hierarchical structure of the sustainability construct, several models with possible factor structures were evaluated, following the method utilized by Dabholkar, Thorpe, and Rentz (1996). These models included (a) the model testing the measurement items of three dimensions of sustainability as one factor (Model 1), (b) the model testing the three dimensions of sustainability as first-order factors (Model 2), and (c) the model testing sustainability as a second-order factor to the three sustainability dimensions (Model 3) (see Table 3). If the second-order factor model performes better than the first-order factor model, this result demonstrates that consumers may perceive an apparel brand's sustainability as a higher-order factor that captures a meaning common to all three dimensions of sustainability.

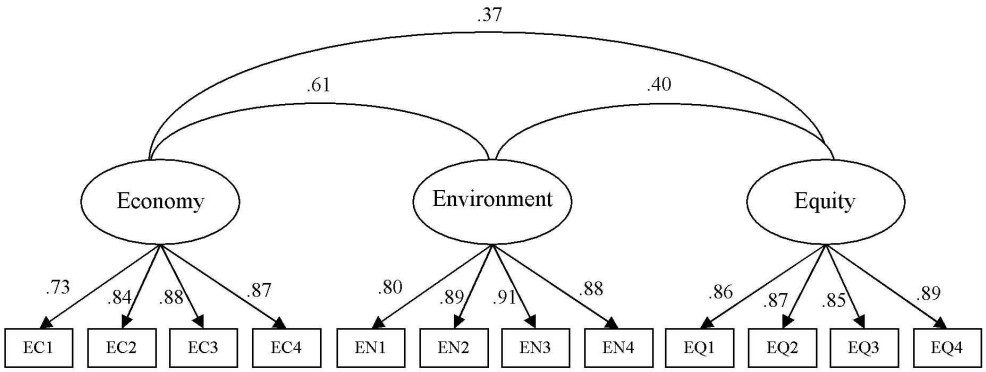


Figure 1.
Confirmatory factor model for sustainability

Table 3.
Comparison of proposed models of sustainability factors

Model	χ^2	*df*	RMSEA	CFI	NFI	TLI
Model 1 (One factor)	992.98	54	.15	.89	.88	.86
Model 2 (Three factors)	225.17	51	.07	.98	.97	.97
Model 3 (Three factors, one second-order factor)	225.17	51	.07	.98	.97	.97
Model 4 (Refined Model 3)	160.280	49	.06	.99	.98	.98

As shown in Table 3, the one-factor model (Model 1) did not produce an acceptable fit, whereas both of the three-factor models (Model 2 and Model 3) yielded good fits. This result confirms that the concept of sustainability can be more adequately measured by using a multi-dimensional construct than by using a uni-dimensional construct. Further, when Model 2 and Model 3 were compared, both models performed very similarly on all fitness measures, leading us to conclude that either one of the three-factor models might be used to model the sustainability of apparel brands. For example, a sustainability model as a first-order factor model (Model 2) may be useful when researchers are interested in measuring the impact of each individual dimension of sustainability on the outcome variables; whereas the second-order factor model (Model 3) may be useful in capturing the extent of common variance for the three dimensions of sustainability as well as the extent to which each dimension represents overall sustainability. As previously discussed, this study focused on the second-order factor model based on the theoretical suggestions made in the TBL model. Figure 2 depicts this higher-order factor model (Model 3) and shows the factor loadings for both first-order and second-order factors. To refine the model further, four pairs of items with high modification indices (MI > 15) were allowed to freely co-vary. The final model (Model 4) exhibited an excellent fit (see Table 3), thereby supporting H2.

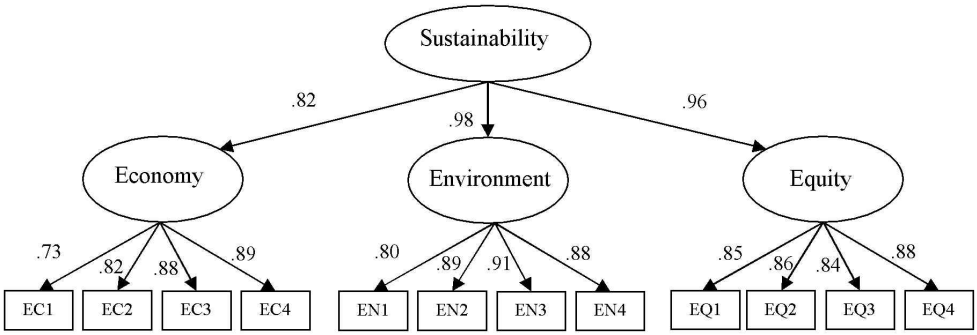


Figure 2.
Modeling sustainability as a higher-order factor

Validity of the Second-Order TBL Model

All 12 items were significant ($p < 0.001$) and exceeded the recommended level of 0.70, suggesting adequate convergent validity. In addition, the average variances extracted (AVEs) for all the latent variables ranged from .69 to .76 (see Table 4), greater than the recommended threshold value of 0.50 (Fornell & Larcker, 1981) further supported convergent validity. Discriminant validity was supported for most constructs as an AVE exceeded shared variance (i.e., squared correlation coefficients) between the respective pairs of latent variables (Fornell & Larcker, 1981). However, as seen in Table 4, the social and environmental dimensions of sustainability were highly correlated. Nevertheless, the second-order model was still deemed valid, given the argument that multidimensional constructs are by nature difficult to establish for discriminant validity (Mathwick, Malhotra, & Rigdon, 2001) and the strong common variance to a higher-order factor structure.

Table 4.
Construct validity of the second-order confirmatory model

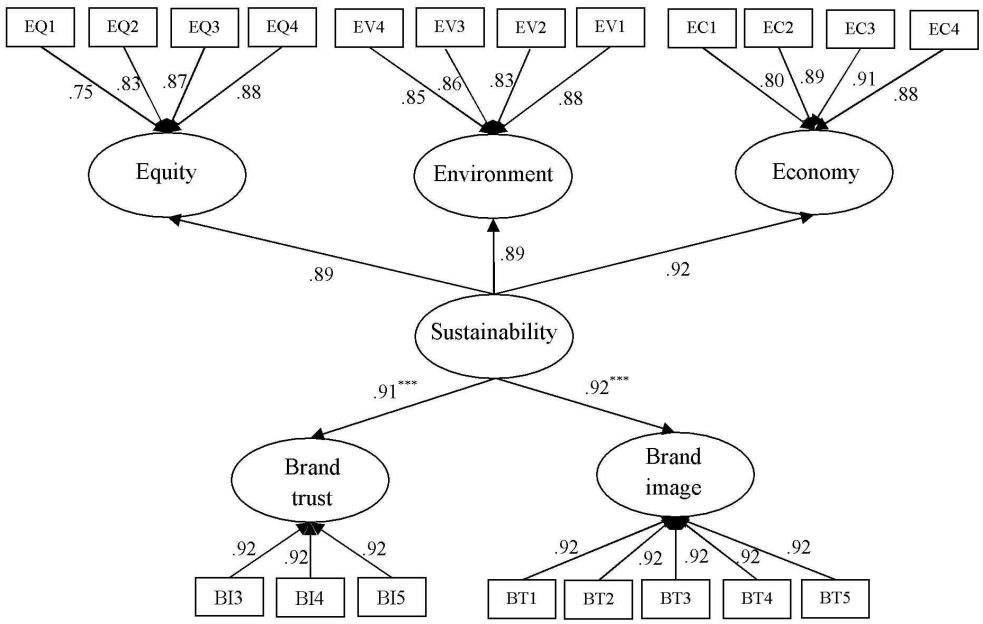
	Environment	Equity	Economy
Environment	**0.76**		
Equity	0.88	**0.73**	
Economy	0.65	0.62	**0.69**

Note. Diagonal entries show the AVE by the construct and off-diagonal entries represent the variance shared (squared correlation) between constructs.

Test of the Structural Model

To further test the predictive validity of the second-order TBL model, the effect of sustainability on two dependent variables, brand image and brand trust, were examined. The fit indices for a structural model

were acceptable: $\chi^2(160) = 820.890$, $\chi^2/df = 5.130$, RMSEA = 0.07, CFI = .95, NFI = 94, TLI = 95. The result of the structural equation modeling (SEM) demonstrated strong predictive validity for the TBL model in that sustainability positively influenced both brand image ($\beta = 0.92$, t-value = 20.29, $p < 0.001$) and brand trust ($\beta = 0.91$, t-value = 18.20, $p < 0.001$) (see Figure 3). Thus, both H3 and H4 were supported.



Note. ***p<.001

Figure 3.
SEM model using a second-order sustainability model

Discussion and Implications

This research provides an important step toward understanding the sustainability of apparel brands as perceived by consumers. Although previous studies have provided evidence that consumer perceptions of apparel firms' sustainable management positively influences desired marketing outcomes such as brand image and brand trust, the diversity found in sustainability conceptualization prevents the adequate theoretical development of consumers' perceptions of apparel sustainability and the resultant brand behaviors. Therefore, this research contributes to the current literature by first proposing and then testing a model for apparel brand sustainability that suitably constitutes its core elements and furthers our understanding

of a consumer's perception of an apparel brand's sustainability.

Theoretically, the results of this study also suggests that the TBL model can serve as a framework for adequately explaining a consumer's perception of an apparel brand's sustainability. As the three elements of sustainability (3Es) are fundamentally linked together, approaching sustainability from each of the three dimensions will be critical in understanding the concept of sustainability as a whole (Molthan-Hill, 2014). In addition, past studies mostly measured consumers' perceived sustainability for brands as a first-order factor although it is possible that consumers could perceive that aspect as a multidimensional, higher-order concept. Our sustainability model as a second-order factor does suggest that consumers do perceive an apparel brand's sustainability as a higher-order factor, as reflected by the 3Es, and thus offers a useful tool for determining overall sustainability of apparel brands as perceived by consumers as well as capturing more precisely each dimension (3Es) of sustainability.

From a managerial perspective, marketers can utilize our sustainability model as a diagnostic tool, as it includes the most basic, fundamental aspects of sustainability (3Es) that are used in consumers' evaluation of apparel brands' sustainability. It has been reported that there is an obvious gap between a brand's actual performance for sustainable practice and consumers' overall perceptions of that sustainability performance (Dumaine, 2014). If consumers believe that a particular brand is more or less sustainable than it actually is, what then are the factors that cause this gap? Understanding consumers' precise perceptions of a brand's sustainable practice will provide a clearer picture of how each aspect of a brand's sustainability contributes to their consumers' overall perceptions of that brand's sustainability. The analysis of our sustainability model will be also beneficial to help identify the different areas of sustainable management and marketing communication that are still weak and require improvement. This study also emphasizes the point that consumers expect firms to meet the triple-bottom line of economic, environmental and social sustainability. Thus, apparel firms should fully incorporate these three pillars of sustainability in its business to achieve strong sustainability.

For future research directions, researchers could develop measurement scales of sustainability for apparel brands. Although this study adopted existing scale items from previous studies, the dimensionality of sustainability could be better examined if the scale items for sustainability were developed from an extensive qualitative study. Researchers could also apply the model of sustainability proposed in this study to retail brands for other sectors, such as consumer technology products, restaurants, and other fast-moving consumer goods. Modifying the measurement scale to fit the specific business sector and further refining the scale of sustainability dimensions are also worthy of future study. Expanding the research model to include other relevant constructs is another natural extension of this study. Researchers could examine the role of moderators that might either strengthen or weaken the actual impact of sustainability on the dependent variables or the mediators between a brand's sustainability and other identified brand outcome variables.

Note

1. Sustainable fashion brands in this study were selected using the following two criteria delineated by by Park and Kim (2016): (a) brands committed to sustainable business from their inception, and (b) brands seeking to transform the whole apparel industry with transformative responses.

2. Fast fashion is viewed as inherently unsustainable because it leads to over-consumption, disposability, and poor product quality (Brenner, 2014; Joy, Sherry, Venkatesh, Wang, & Chan, 2012).

3. Independent samples t-tests revealed that consumers did perceive sustainable fashion brands as more sustainable than fast fashion brands. That is, sustainable fashion brands exhibited a significantly higher level of economic sustainability ($t = 8.50$, $p < 0.001$), environmental sustainability ($t = 9.80$, $p < 0.001$), and social sustainability ($t = 8.73$, $p < 0.001$) compared to fast fashion brands.

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