

# A theoretical investigation of slow fashion: sustainable future of the apparel industry

Sojin Jung and Byoungjo Jin

Department of Consumer, Apparel and Retail Studies, The University of North Carolina at Greensboro, Greensboro, North Carolina, USA

## Keywords

Slow fashion, slow production, slow consumption, environmental sustainability, small apparel business strategy, scale development.

## Correspondence

Sojin Jung, Bryan School of Business and Economics, Department of Consumer, Apparel and Retail Studies, The University of North Carolina at Greensboro, 210 Stone Building, Greensboro, NC 27402-6170, USA. E-mail: s\_jung5@uncg.edu

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## Abstract

Environmental sustainability issues become important in the apparel industry. Primary practices involve replacing harmful chemicals with environmentally friendly materials, and reducing amounts of waste and resource consumption through apparel recycling. A more recent sustainable movement in the industry is slow fashion. It is a socially conscious movement that shifts consumers' mindsets from quantity to quality, encouraging people to buy high-quality items less often (Fletcher). Slow fashion encompasses slow production and consumption. Slow production does not exploit natural and human resources to expedite manufacturing speed (Fletcher), and slow consumption entails a longer product lifespan from manufacturing to discarding. Although the slow fashion concept may not be limited only to environmental sustainability, the conceptual distinction between slow fashion and environmentally sustainable fashion remains vague. This may be because academic understanding towards slow fashion is very limited despite the growing interests in slow fashion in practice. The purpose of this study is to explore the dimensions of slow fashion following Churchill's paradigm for measurement development. Through the scale item development measuring consumer orientations to slow fashion, this study attempts to define slow fashion theoretically with underlying dimensions. The initial scale items were generated based on a literature review and an open-ended survey. Then, via two surveys (i.e. with student and non-student samples) in the Southeastern region of the US, the items were purified and validated. As a result, 15 items of five dimensions accounted for slow fashion: *equity*, *authenticity*, *functionality*, *localism* and *exclusivity*. The identified five dimensions clearly show that slow fashion is a broader concept than environmental sustainability alone, encompassing (1) caring for producers and local communities for sustainable life (equity and localism); (2) connoting history for sustainable perceived value of the product (authenticity); (3) seeking diversity for the sustainable fashions world (exclusivity); and (4) maximizing product lifespan and efficiency for a sustainable environment (functionality). This study is one of the first attempts to seek underlying dimensions of slow fashion through scale development. This procedure may provide a basis for a theoretical definition of the slow fashion concept. Regarding practical contributions, slow fashion may be useful to foster US domestic apparel manufacturing and local economies. Furthermore, slow fashion may broaden the range of consumers' choices. When combining a young and independent designer's innovative spirit with local resources, slow fashion is likely to lead fashion diversity, beyond being driven by identical fashion trends.

## Introduction

The apparel industry has concerns about the impact of clothing on sustainability. The approach to sustainability, however, has been largely limited to environmentally friendly material selection (Niinimäki, 2010) or understanding consumers' attitudes and behaviors towards apparel made of organically grown cotton, clothing donation and recycling (Shim, 1995; Hustvedt and Dickson, 2009; Niinimäki, 2010; Goworek, 2011). Although previous studies have revealed important findings, they may be

limited because the apparel consumption itself, rather than just selecting and consuming apparel items made of environmentally friendly material, creates much greater impact on the environment as it increases solid waste and depletes resources (Niinimäki, 2010; Hiller Connell, 2011). This calls for more sustainable ways of apparel consumption.

This study focuses on slow fashion that emerged recently as a sustainable movement in the apparel industry. Slow fashion claims to slow down the fashion cycle via a combination of slow production and consumption. Slow production does not exploit natural

and human resources to expedite manufacturing speed (Fletcher, 2007), and slow consumption entails a longer product lifespan from manufacturing to discarding. That is, it is a socially conscious movement that shifts consumers' mindsets from quantity to quality, encouraging people to buy high-quality items less often (Fletcher, 2007). This movement is against increasing fashion waste from the fast fashion system that involves rapid catching-up trends with minimum quality.

As this notion of slow fashion represents, slow fashion is related to, but not limited to, environmental sustainability. Nonetheless, the conceptual distinction between slow fashion and environmentally sustainable fashion remains very vague. Academic understanding towards slow fashion is insufficient. Even a formal definition of slow fashion is non-existent (Watson and Yan, 2013) and very few studies investigate the concept and scope of slow fashion (Pookulangara and Shephard, 2013; Watson and Yan, 2013). Such lack of a conceptual definition of slow fashion is problematic considering the growing interest in slow fashion in practice.

This study posits that elucidating the concept of slow fashion requires answers to two major questions: (1) what are the underlying dimensions of slow fashion? and (2) how is the concept of slow fashion related to environmental sustainability? To answer to these questions, the purpose of this study is to develop the scale of consumer orientation towards slow fashion through which the dimensions of slow fashion is unveiled. This exploratory study conducts a series of steps from scale item generation, purification and validation stages following Churchill's (1979) paradigm for developing measurement. With the identified dimensions, how the slow fashion concept is different from or similar to other research and practice streams around environmental sustainability in the industry will be discussed. Also, with the identified dimensions of slow fashion, this study will provide apparel businesses and consumers with practical implications for the sustainable future.

## Literature review

This study first introduces how the apparel industry has approached environmental sustainability issues. Then, the review of the slow fashion concept available in the literature follows.

### Environmental sustainability issues and clothing

The life cycle stages of clothing are harmful to the environment by consuming energy, chemicals and water. With the example of a cotton T-shirt, due to its vulnerability to insect attacks, it is estimated that cotton production requires 10% of the annual worldwide usage of all synthetic pesticides (Gam *et al.*, 2010). The toxicity persistently impacts the environment, and it leads to poisoning of farmers as well as degradation of natural resources. In addition, 132.5 l of water are consumed to dye one pound of textile (Hiller Connell and Kozar, 2012), and a significant amount of gasoline is consumed for transports between supply chains or from supply chains to end consumers. Laundry is also environmentally harmful because of the variety of chemicals that are used in dry cleaning processes and home laundry (Hiller Connell, 2011). In the end, clothing may move to landfills, unless reused or recycled, increasing the earth's solid waste loads.

Generally, environmental sustainability issues can be resolved in various ways: (1) by controlling waste emissions not to exceed the assimilative capacity of the environment; (2) by maintaining the rate of extraction of renewable resources (i.e. harvest) within the regeneration rate; (3) by minimizing the extraction of non-renewable resources; and (4) by maintaining depletion rates of non-renewable resources not to exceed the rate of creating renewable substitutes (Goodland, 1995; Ramjohn, 2008). Nonetheless, the environmentally sustainable attempts of apparel manufacturing have only focused on replacing harmful chemicals with environmentally friendly materials, such as organic and reused material, to decrease environmental impacts (Niinimäki, 2010; Goworek, 2011; LeBlanc, 2012). However, the material focus in production is just a part of sustainable environmental practices because apparel production itself causes a series of negative impacts on the environment. It is noteworthy that substantial amounts of apparel consumption also deplete natural resources, and generate solid waste, which harms the environment. Therefore, controlling consumption levels are very important to keep a healthy environment. Patagonia released the 'Don't buy this jacket' campaign with the statement 'while the jacket is made from recycled polyester, it still generates 24 times its weight in carbon emission and uses enough water to meet the daily needs of 45 people' (Sweeney, 2012). Through this advertisement, the brand aimed to encourage people to buy less.

With the growing interest in environmentally conscious consumption, research trends of environmentally sustainable apparel have focused on consumers' intention to buy apparel made from organically grown and recycled material (Hustvedt and Dickson, 2009; Gam *et al.*, 2010), apparel disposal behaviors (Shim, 1995; Ha-Brookshire and Hodges, 2009) and consumer knowledge of the environmental impact of clothing (Domina and Koch, 1998; Kim and Damhorst, 1998). Although a substantial amount of apparel consumption is problematic, studies addressing higher volumes of clothing consumption remain scarce (Morgan and Birtwistle, 2009). Furthermore, many studies point out the gap between consumers' attitudes and behaviors towards environmentally sustainable apparel because the limited product assortment precludes self-expression and aesthetic satisfaction (Butler and Francis, 1997; Niinimäki, 2010; Niinimäki and Hassi, 2011; Hiller Connell and Kozar, 2012). In fact, apparel consumers consider style and fit more than environmental concerns when they make purchasing decisions (Butler and Francis, 1997).

The above shows that current environmental sustainability issues of the apparel industry focus less on reducing consumption levels. Also, given that consumers are less likely to purchase environmentally sustainable apparel products (Butler and Francis, 1997), the effectiveness of green marketing strategies is questioned. From this stance, this study introduces the slow fashion practice as a way of being sustainable yet fashionable, and as a way of buying less but high quality (Clark, 2008). The background and concept of slow fashion is further delineated next.

### Slow fashion

The slow movement of the apparel industry began with the term 'slow fashion' first coined by Fletcher (2007). As a counteraction to the prevailing fast movement, such slow approaches have emerged in various areas like slow food. As the slow food

movement emerged against the popularity of fast food, slow fashion also appeared as the antithesis to the current fast fashion system. Below the fast fashion system is reviewed briefly as a background for slow fashion.

### Background: antithesis of fast fashion

For decades, the ubiquitous practices of the apparel industry have involved rapid production, short lead time and increasing the number of fashion seasons with lower cost materials and labor (Bhardwaj and Fairhurst, 2010; Fletcher, 2010). This is the core of the fast fashion business model implemented by Zara, H&M and Forever 21. However, lower prices stimulate consumers to overly consume fashion (Cline, 2012), which compromises the quality of the product, resulting in 'clothes to be worn 10 times' (Ghemawat and Nueno, 2003). The cheap fabric and poor garment construction cannot resist multiple launderings. Moreover, rapid catching-up trends have led to 'perishable fashion clothes' by shortening the lifespan of the product deliberately (Byun and Sternquist, 2008). Along with low pricing strategies, deliberate obsolescence of durability and style spurs people to buy multiple clothes at once and discard them shortly with little perceived value (Fletcher, 2010). Against cheap, homogenous and quantity-oriented fashion, a number of designers in the UK have begun to take a slow and more sustainable approach to designing and making clothes. They raise questions about the social as well as environmental impacts of the volume-budget model and promote slow culture and values in fashion as is in the slow food movement.

The philosophy behind slow fashion is consistent with Slow Food, founded by Carlo Petrini in Italy in 1986. The slow food movement is a way of living and eating, which pursues pleasure of food with commitment to the community and the environment (Slow Food USA, 2013). Similarly, Fletcher (2008) suggested that slow fashion is about designing, producing, consuming and living better by considering environmental and social sustainability and by producing beautiful and conscientious garments at a lower speed. According to this suggestion, slow fashion is not just about slowing down the pace of the fashion cycle. It is rather a socially conscious movement that shifts consumers' mindsets from quantity to quality, encouraging people to buy high-quality items less often (Fletcher, 2007). As this denotes, the concept of slow fashion can be approached from production and consumption aspects.

### Slow production

Cataldi *et al.* (2010) indicate that slowing down the production cycle enables the environment and people to co-exist healthier and allows time for the environment to regenerate. Without exploiting natural resources, low-speed production enables raw materials to grow naturally (Fletcher, 2007). Inherently, slow fashion is eco-friendly since items are produced slowly in small batches, which reduces the consumption of resources and the amounts of waste (Cline, 2012). Slower production also improves the quality of life of all workers, guaranteeing their fundamental human rights by taking the time pressure off. In longer term planning, producers may have more time to build mutual relationships among workers. Instead of temporary or subcontracted workers or an excessive workload to meet unpredictable demands, workers may get

employment and regular working hours secured. Meanwhile, they can spend more time on each garment, which enhances the quality of the product. Aiming at meeting human needs, Cataldi *et al.* (2010) suggested co-creating garments with consumers as a pivotal characteristic of slow fashion in contrast to the mass production system. In the slow fashion system, it is possible for designers to invite consumers into the design process, which satisfies their needs for creativity and identity. Although the co-creation process fosters connections between producers and consumers, it encourages consumers to act more responsibly with their increased awareness of how a garment is made.

### Slow consumption

Slow fashion requires a more holistic view by taking into account not only how to produce but also how to consume. This is because sustainable production can become unsustainable when garments made of eco-friendly materials are worn only a few times and discarded quickly (LeBlanc, 2012). Therefore, a critical matter is to prolong the product's lifecycle and maximize its utility, indicating slow consumption. A longer product lifespan allows reducing consumption of natural resources and the waste of energy. Slow fashion encourages people to buy less but at higher quality that is durable. In slow and sustainable fashion systems, however, quality is not only about the physical, but it also includes design aspects. In other words, highly qualified design products are long lasting in terms of style (Johansson, 2010). With designs less influenced by fashion trends and with the clothing made of durable materials, people can wear the clothing for a long time, regardless of fashion seasons. This increased longevity implies slow consumption. In slow consumption, consumers may take time to fully appreciate fashion and hold the clothing for a long time, thereby fulfilling needs for personal identity rather than following fast-moving identical trends (Johansson, 2010).

Furthermore, sustainable designs often consider multiple outfits, which increase versatility (LeBlanc, 2012). By buying a suit of high-quality clothes and wearing it more often in multiple ways, it meets a sustainable way of being fashionable, which is a principal of slow fashion (Clark, 2008). Uniform Project launched in 2009 by Sheena Matheiken is one such example. In the project, Sheena Matheiken began to wear one black dress for an entire year in unique ways with handmade, recycled or donated accessories. The project was born against the corporate world where there is a lack of creativity, ethics and sustainability and received a great deal of media attention from the outlets such as *the New York Times*, *CNN*, *BBC*, *Elle* and *Marie Claire*. As a sustainable exercise, Matheiken is expanding the idea into an ongoing mission.

In sum, slow fashion appeared as the antithesis of the fashion waste of the fast fashion system; thus, it is related to environment sustainability. However, practices pertaining to slow production and consumption may differ from just focusing on organic materials and recycling in disposal. Therefore, a theoretical investigation of slow fashion is required to find how the slow fashion concept is different from or similar to the environmental sustainability concept in the industry. Based on the review of slow fashion concepts, we next develop a scale of consumer orientation to slow fashion in order to understand the slow fashion concept fully from a theoretical perspective.

## A theoretical investigation of slow fashion

Following Churchill's (1979) paradigm for developing measurement, this study attempted to find underlying dimensions of slow fashion through measuring consumer orientation to slow fashion. Figure 1 describes the procedure of this study: scale item generation, purification and validation.

### Scale item generation

First, in order to identify the domain, an open-ended survey was conducted via the judgment sampling method. The judgment sampling method was employed to recruit persons who could provide ideas of the phenomenon in the survey, as suggested in Churchill's (1979) study. The survey was distributed to 31 university students who were taking a retailing course; it was distributed in a classroom setting with the instructor's permission. Because the students were majoring in consumer and apparel studies, they were expected to be more likely to know about the slow fashion movement than students from other majors. The students were asked to answer the survey voluntarily during the class period. Three open-ended questions were presented: (1) Have you heard about 'Slow Fashion' before? (2) What would slow fashion be like? and (3) Do you have any experience with slow fashion? The survey provided a very short description of slow fashion to avoid any confusion in respondents who were not familiar with the terminology of the topic. The description read as follows:

Slow fashion aims at designing, producing, consuming and living better by slowing down the fashion cycle, moving from quantity- to quality-based. Slow fashion is not just the opposite of fast fashion, but more sustainable and ethical ways of being fashionable. The concept of slow fashion borrows from the slow food movement, which links pleasure and food with awareness and responsibility.

After reading the description above, subjects were asked to write down their opinion in terms of the three questions. Then, the researchers of this study categorized similar answers, and the categories were compared with the slow fashion concept found in the literature. Based on the identified common domains of slow fashion, an initial 69 items to measure consumer orientations related to slow fashion were generated through modifying existing items (Kim and Damhorst, 1998; Tian *et al.*, 2001), and creating new items. The content validity of the initially developed 69 items was examined by both non-experts and experts in the apparel and consumer areas. After deleting or modifying redundant, vague and misleading items, 43 items were retained.

### Scale item purification

Subsequent item refinement procedure was carried out with student samples via a survey. A student sample was recruited at a university in the southeastern region of the US by the convenience sampling method. With permission from the instructor, the survey was distributed in the classroom. A total of 129 students participated in the survey. The items were measured on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree), and the final 121 responses were further analysed after discarding incomplete responses. The student sample was homogeneous in terms of age (Mean = 20.08 years old), education and income level. The majority of the sample was female (89.3% of the total respondents). Regarding ethnicity, Caucasian accounted for 53.3%, and African American accounted for 30.8% of the total respondents.

In order to find whether slow fashion orientation items meet the statistical requirement for exploratory factor analysis (EFA), correlations of the data matrix, Bartlett test of sphericity and measure of sampling adequacy through the Kaiser-Meyer-Olkin (KMO) measure were examined. A number of correlation coefficients were greater than 0.30, and the Bartlett test of sphericity was significant [ $\chi^2 = 2740.274$ , degrees of freedom (d.f.) = 903,  $P < 0.000$ ]. Moreover, the KMO measure was 0.731. These results indicated that the scale items hold factorability, meaning that they are appropriate to conduct the factor analysis.

By the principal components method with varimax rotation, the EFA was undertaken with the first surveyed items by IBM SPSS 21.0. While retaining factors with eigenvalues greater than 1.0, and items with factor loadings of 0.40 or more, cross-loading items were disregarded. As a result, the slow fashion construct was explained by five factors: equity, authenticity, functionality, localism and exclusivity. A total of 15 items (Cronbach's  $\alpha = 0.845$ ) accounted for 69.37% of total variance, and each factor had three items. In addition, the items were reliable based on Cronbach's  $\alpha$ . Specifically, the first factor, referred to as equity (15.52% of variance, Cronbach's  $\alpha = 0.813$ ), was concerned with fair trade and compensation for producers. The second factor addressed authenticity (14.93% of variance, Cronbach's  $\alpha = 0.763$ ), which respects craftsmanship and traditional techniques. The third factor, functionality (13.50% of variance, Cronbach's  $\alpha = 0.725$ ), included consideration of the longevity and versatility of clothing. The fourth factor, localism (12.89% of variance, Cronbach's  $\alpha = 0.725$ ), indicated a preference towards local and domestic businesses. The final factor, exclusivity (12.54% of variance, Cronbach's  $\alpha = 0.731$ ), was related to enjoying uniqueness because of product scarcity.

With the five factors found in the EFA, the 15 items of the five-factor model were analysed by the confirmatory factor analysis (CFA) of maximum likelihood estimation in AMOS 21.0

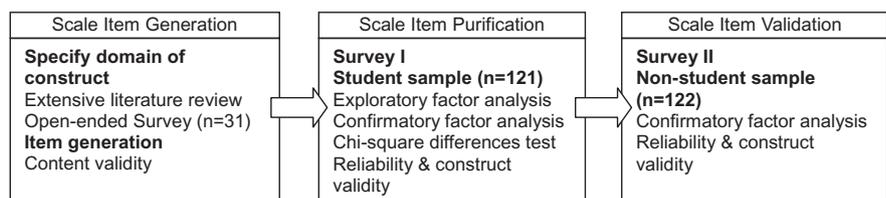


Figure 1 Study procedure.

**Table 1** Confirmatory factor analysis: a student sample ( $n = 121$ )

	Standardized estimate	Standard error	t-value
Equity (Cronbach's $\alpha = .813$ , CR <sup>a</sup> = .826, AVE <sup>b</sup> = .607)			
X <sub>1</sub> : I am concerned about the working conditions of producers when I buy clothes.	.838	–	–
X <sub>2</sub> : I am concerned about fair trade when I buy clothes.	.829	.110	9.005*
X <sub>3</sub> : Fair compensation for apparel producers is important to me when I buy clothes.	.657	.087	7.238*
Authenticity (Cronbach's $\alpha = .763$ , CR = .764, AVE = .523)			
X <sub>4</sub> : Handcrafted clothes are more valuable than mass-produced ones.	.774	–	–
X <sub>5</sub> : Craftsmanship is very important in clothes.	.712	.122	6.896*
X <sub>6</sub> : I value clothes made by traditional techniques.	.678	.117	6.621*
Functionality (Cronbach's $\alpha = .725$ , CR = .747, AVE = .488)			
X <sub>7</sub> : I tend to keep clothes as long as possible rather than discarding quickly.	.792	–	–
X <sub>8</sub> : I often enjoy wearing the same clothes in multiple ways.	.698	.172	5.340*
X <sub>9</sub> : I prefer simple and classic designs.	.591	.159	5.046*
Localism (Cronbach's $\alpha = .725$ , CR = .750, AVE = .509)			
X <sub>10</sub> : I believe clothes made of locally produced materials are more valuable.	.924	–	–
X <sub>11</sub> : I prefer buying clothes made in the US to clothes manufactured overseas.	.596	.116	5.747*
X <sub>12</sub> : We need to support US apparel brands.	.565	.103	5.502*
Exclusivity (Cronbach's $\alpha = .731$ , CR = .697, AVE = .478)			
X <sub>13</sub> : Limited editions hold special appeal for me.	.762	–	–
X <sub>14</sub> : I am very attracted to rare apparel items.	.714	.122	6.226*
X <sub>15</sub> : I enjoy having clothes that others do not.	.586	.121	5.428*

\* $P < 0.001$ .

AVE, average variance extracted; CR, composite reliability. Model fit.  $\chi^2 = 104.602$  [degrees of freedom (d.f.) = 80,  $P = 0.034$ ],  $\chi^2/d.f. = 1.308$ ; comparative fit index = 0.958, tucker-lewis index = 0.944, root mean square error of approximation = 0.051.

	Correlations						
	Mean	SD	1	2	3	4	5
1. Equity	3.270	.869	<b>.779</b>				
2. Authenticity	3.601	.835	.507***	<b>.723</b>			
3. Functionality	3.950	.783	.142	.188*	<b>.699</b>		
4. Localism	3.460	.804	.376***	.441***	.250**	<b>.713</b>	
5. Exclusivity	3.749	.890	.414***	.436***	.277**	.335***	<b>.691</b>

\* $P < 0.05$ .

\*\* $P < 0.01$ .

\*\*\* $P < 0.001$ .

SD, standard deviation.

The lower triangle of the matrix represents the correlation coefficients between constructs.

The diagonal values (boldfaced values) represent the square root of the average variance extracted of each construct.

**Table 2** Mean, standard deviation and correlations: a student sample ( $n = 121$ )

(Table 1). In order to find the goodness-of-fit of the model, the  $\chi^2$  statistic, the normed  $\chi^2$ , the comparative fit index (CFI), the Tucker–Lewis index (TLI) and the root mean square error of approximation (RMSEA) were considered. Overall, the estimated model had acceptable threshold in the  $\chi^2$  statistic ( $\chi^2 = 104.602$ , d.f. = 80,  $P > 0.01$ ), the normed  $\chi^2$  ( $\chi^2/d.f. = 1.308$ ), the CFI (0.958), the TLI (0.944) and the RMSEA (0.051) (Hair *et al.*, 2009). Also, a significant amount of modification indices were not found in this model.

Based on an acceptable threshold of 0.7 in composite reliability (CR) (Bagozzi *et al.*, 1991; Hair *et al.*, 2009), all constructs were reliable, ranging from 0.697 (exclusivity) to 0.826 (equity). For construct validity, convergent validity and discriminant validity were considered. First, convergent validity was supported given that all standardized factor loadings were greater than 0.5 and the

average variance extracted (AVE) values were a proximate to or exceeded 0.5, which is an acceptable magnitude (Bagozzi *et al.*, 1991; Hair *et al.*, 2009). For discriminant validity, the square root of AVE values for any two constructs were compared with the correlation estimate between these two constructs, as suggested by Fornell and Larcker (1981). By finding that the square root of AVE of each pair of constructs was greater than corresponding correlations estimate in all cases, this study confirmed the discriminant validity of the consumer orientation to slow fashion scale in a student sample (Table 2).

A  $\chi^2$  difference test was also conducted between the five-factor model and a single-factor model (Fig. 2) as correlations among latent constructs were moderate to high as shown in Table 2. The  $\chi^2$  difference statistic can test either the statistical significance of the decrement in overall fit when free parameters are eliminated or

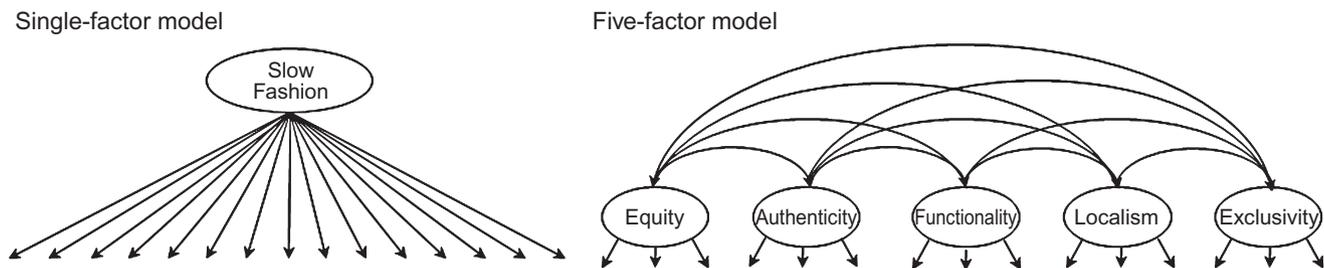


Figure 2 A single-factor model and five-factor model.

Table 3 Sample descriptions: a non-student sample (n = 122)

		n	%			n	%	
Gender	Male	36	29.5	The highest education	High school and less	13	10.7	
	Female	69	56.6		Some college	32	26.2	
	N/A	17	13.9		Bachelor	40	32.8	
Age	20–29	14	11.4	Master		22	18.0	
	30–39	21	17.2		PhD	4	3.3	
	40–49	28	23.1		N/A	11	9.0	
	50–59	26	21.2					
	60 and over	14	11.3					
	N/A	19	15.8					
Ethnicity	Caucasian	70	57.4	Annual income	\$20,000 and less	12	9.8	
	African American	21	17.2		\$20,001–40,000	37	30.3	
	Asian	6	4.8		\$40,001–60,000	26	21.3	
	Hispanic	20	16.4		\$60,001–80,000	14	11.5	
	Mixed	5	4.1		\$80,001 and more	16	13.1	
	N/A	0	0		N/A	17	13.9	

the improvement in overall fit as free parameters are added (Kline, 2011). Compared with the five-factor model, the one-factor model had a reduced number of free parameters. In this case, the larger value of  $\chi^2_{D}$  rejects the equal-fit-hypothesis between the two models, which means the reduced free parameter model is oversimplified (Kline, 2011). The  $\chi^2$  difference test between the five-factor model ( $\chi^2 = 104.602$ , d.f. = 80) and the one-factor model ( $\chi^2 = 296.97$ , d.f. = 90) revealed that the five-factor model had a better fit than a single-factor model for the data ( $\chi^2_{D} = 192.374$ , d.f.<sub>D</sub> = 10) at 0.05 level ( $\chi^2_{crit} = 18.31$ , d.f. = 10). To conclude, the slow fashion orientation construct consists of five dimensions: equity, authenticity, functionality, localism and exclusivity.

**Scale item validation**

For further refinement and a reliability check of the 15 items, the second survey was conducted with a non-student sample that was heterogeneous (Table 3). Focusing on the southeastern region of the US, people in public places, such as parks and the rest area of shopping malls, were asked to fill out the survey, and 126 volunteers took part. After screening out student participants and incomplete answers, 122 responses were analysed.

With AMOS 21.0, the CFA of maximum likelihood estimation was conducted. The  $\chi^2$  statistic, the normed  $\chi^2$ , the CFI, the TLI and the RMSEA were considered for the model fit (Table 4). As a

result, the  $\chi^2$  test was significant ( $\chi^2 = 137.191$ , d.f. = 80,  $P < 0.001$ ), rejecting the exact-fit hypothesis. However, as  $\chi^2$  statistic is sensitive to sample size (Hair *et al.*, 2009), other model fit indices confirmed a satisfactory model fit ( $\chi^2/d.f. = 1.715$ , CFI = 0.904, TLI = 0.874, RMSEA = 0.077).

Moreover, all constructs were reliable, measuring around or exceeding 0.70 of the CR, which indicates adequate internal consistency. Regarding the convergent validity, the functionality dimension seemed to be problematic by having a lower AVE value (0.383) than the acceptable magnitude of 0.5 (Bagozzi *et al.*, 1991; Hair *et al.*, 2009). This may be because the versatility item (X<sub>9</sub>) had a relatively low factor loading (0.393). However, the other dimensions held convergent validity with an adequate magnitude of AVE, ranging from 0.498 (exclusivity) to 0.626 (equity). In addition, the square root AVE estimates of any two constructs were greater than the correlation estimates between these two constructs in all cases, supporting discriminant validity (Table 5). The results of CFA with the non-student sample confirmed the five factors with 15 items (i.e. equity, authenticity, functionality, localism and exclusivity) of the student sample survey.

Taking all of these results into account, the five-dimension scale, comprised of 15 items, was fairly reliable and valid across the two different samples. Through the data, these results clearly demonstrate that slow fashion can be defined by equity, authenticity, functionality, localism and exclusivity.

**Table 4** Confirmatory factor analysis: a non-student sample ( $n = 122$ )

	Standardized estimate	Standard error	t-value
Equity (Cronbach's $\alpha = .819$ , CR <sup>a</sup> = .833, AVE <sup>b</sup> = .626)			
X <sub>1</sub> : I am concerned about the working conditions of producers when I buy clothes.	.910	–	–
X <sub>2</sub> : I am concerned about fair trade when I buy clothes.	.775	.096	8.829*
X <sub>3</sub> : Fair compensation for apparel producers is important to me when I buy clothes.	.670	.091	7.620*
Authenticity (Cronbach's $\alpha = .746$ , CR = .764, AVE = .505)			
X <sub>4</sub> : Craftsmanship is very important in clothes.	.850	–	–
X <sub>5</sub> : I value clothes made by traditional techniques.	.666	.151	6.205*
X <sub>6</sub> : Handcrafted clothes are more valuable than mass-produced ones.	.590	.147	5.669*
Functionality (Cronbach's $\alpha = .670$ , CR = .702, AVE = .383)			
X <sub>7</sub> : I tend to keep clothes as long as possible rather than discarding quickly.	.762	–	–
X <sub>8</sub> : I prefer simple and class designs.	.644	.175	4.745*
X <sub>9</sub> : I often enjoy wearing the same clothes in multiple ways.	.393	.167	3.452*
Localism (Cronbach's $\alpha = .786$ , CR = .736, AVE = .586)			
X <sub>10</sub> : We need to support US apparel brands.	.925	–	–
X <sub>11</sub> : I prefer buying clothes made in US to clothes manufactured overseas.	.768	.117	7.858*
X <sub>12</sub> : I believe clothes made of locally produced materials are more valuable.	.558	.100	5.941*
Exclusivity (Cronbach's $\alpha = .742$ , CR = .687, AVE = .498)			
X <sub>13</sub> : I am very attracted to rare apparel items.	.765	–	–
X <sub>14</sub> : Limited editions hold special appeal for me.	.739	.162	5.698*
X <sub>15</sub> : I enjoy having clothes that others do not.	.603	.131	5.336*

\* $P < 0.001$ .

AVE, average variance extracted; CR, composite reliability.

Model fit.  $\chi^2 = 137.191$  [degrees of freedom (d.f.) = 80,  $P = 0.000$ ],  $\chi^2/d.f. = 1.715$ ; comparative fit index = 0.904, tucker-lewis index = 0.874, root mean square error of approximation = 0.077.

	Mean	SD	Correlations				
			1	2	3	4	5
1. Equity	3.544	.864	<b>.791</b>				
2. Authenticity	3.697	.767	.361**	<b>.711</b>			
3. Functionality	4.082	.636	.362**	.274*	<b>.619</b>		
4. Localism	3.896	.885	.377**	.320**	.341**	<b>.766</b>	
5. Exclusivity	3.063	.953	.141	.275*	.163	.106	<b>.706</b>

\* $P < 0.01$ .

\*\* $P < 0.001$ .

SD, standard deviation.

The lower triangle of the matrix represents the correlation coefficients between constructs.

The diagonal values (boldfaced values) represent the square root of the average variance extracted of each construct.

**Table 5** Mean, standard deviation and correlations: a non-student sample ( $n = 122$ )

## Discussion

This study developed the scale of consumer orientation towards slow fashion to identify its dimensions, which help us to clearly understand the slow fashion concept. Following Churchill's (1979) scale development paradigm, an item pool was developed from extensive literature review and an open-ended survey. Subsequent item refinement and validation procedures were carried out with two different samples via surveys. As a result the CFA, five dimensions of the slow fashion orientation (i.e. equity, authenticity, functionality, localism and exclusivity) were identified with a student sample, and the identified dimensions were validated with a non-student sample.

The first dimension of the slow fashion orientation was found to be *equity*. This addressed that slow fashion products should be

equally assessable to everyone through fair trade, and producers should be respected and compensated accordingly. Freeing from excessive workloads, better working conditions should be secured in slow production system. However, being slow is not just the opposite of being fast, but value is added to the products by slowing down the process. As found in the second dimension, *authenticity*, the shift should be towards highly skilled and craft-based production (Cooper, 2005). Slow production with hand craftsmanship and traditional technique would allow makers to spend longer on each piece of a garment so that each item connotes its own history. In addition, *localism* involved supporting local businesses and using local resources. Not limited to local communities, this dimension expands to preferring domestic brands to global apparel brands. This is very encouraging to the US apparel industry in that manufacturing has been transferred overseas

corresponding to increased labor costs, and the imports penetration rate in the US apparel market exceeded 97% (American Apparel & Footwear Association, 2009). *Exclusivity* was also found as fourth dimension. In the mass-produced fast fashion cycle, consumers may feel 'poverty midst plenty' because of lack of unique items that are conducive to express themselves. Although fast fashion retailers are eager to introduce high-end fashion styles, products are likely to be standardized and homogenized. In other words, fast fashion lacks diversity that is associated with little opportunity for self-expression (Johansson, 2010). However, diverse fashion is available through heterogeneous and rare fashion items from small quantity production of the slow fashion system. Compared with former dimensions, the fifth *functionality* dimension is closely related to post-purchase stage in consumption. Maximizing utility of the product, the functionality dimension involved longevity and versatility of the clothing. That is, people buy a high quality and wear it longer, more often and in multiple ways. This is a sharp contrast to a fast consumption loop that spurs to buy multiple clothing items at a time and discard them quickly.

It is important to note that although slow fashion was first received attention as movement against environmentally unsustainable fast fashion, the material selection and recycled disposal options, which are core practices to achieve environmental sustainability in the apparel industry, did not emerge as a slow fashion dimension. Instead, as found in literature review, the slow fashion consumers care about buying items less driven by fashion trends and wearing it for a long time (i.e. functionality dimension), thereby extending product life cycle. Also, consumers may have more perceived value with slow fashion items made by craftsmanship in small quantities (i.e. authenticity and exclusivity dimensions). Slow fashion consumers are further concerned about the influence of clothes on producers (i.e. equity dimension) and societies (i.e. localism dimension) as a whole in a sustainable perspective. Thus, five dimensions of slow fashion found in this study indicate that slow fashion is associated with not only environmental sustainability but also social sustainability. From this, it becomes clear that slow fashion is a broader concept than environmental sustainability alone, encompassing (1) caring for producers and local communities for sustainable life (equity and localism); (2) connoting history for sustainable perceived value of the product (authenticity); (3) seeking diversity for the sustainable fashion world (exclusivity); and (4) maximizing product lifespan and efficiency for a sustainable environment (functionality). In this sense, Patagonia mentioned in the literature review is not regarded as a slow fashion brand as the slow fashion dimensions such as localism and authenticity are not embedded in the brand.

## Implications

This study is one of the first attempts to seek underlying dimensions of slow fashion through scale development. This procedure may provide a base for a theoretical definition of the slow fashion concept. By providing a key understanding of the movement, five dimensions of slow fashion clearly show how the concept is related to and differ from environmentally sustainable fashion that largely focuses on organic material and recycling. Furthermore, the newly developed scale contributes to extend the body of knowledge about slow fashion consumers, in that the scale measures consumer

orientations related to slow fashion products and consumption. The identified five dimensions add to sustainability literature as each of the dimensions specifically explains how the slow fashion concept can contribute to a broader concept of sustainability.

In practical implications, slow fashion may be useful to foster US domestic apparel manufacturing and small businesses. With increased labor costs, US apparel manufacturing has heavily relied on offshore manufacturing of mass fashion commodities. However, the amount of cost saving from the outsourcing may be negligible for small businesses that are less likely to utilize the economies of scale. Rather, insufficient order size keeps them from finding better quality partners (Dana *et al.*, 2007). Moreover, as a substantial consolidation of the US retailers happened in the early to mid-1970s, small retailers have struggled for survival. With the large-scale production, the number of stores decreased, whereas the average volume of sales per retailer increased, indicating the power shift to mass retailers (Boyd, 1997). In the US apparel industry, top 10 retailers control as much as 47% of the total US apparel sales (as cited in Rantisi, 2002). Under this situation, small apparel firms need to seek a distinctive way that large companies cannot achieve given their significant impact on the US economy. Small business represents more than 99.7% of all employers in the US, pay 44.5% of total US private payrolls and generate 60–80% of new jobs annually. Importantly, small business produces 13–14 times more patents per employee than large firms (Allen, 2006). Considering that the slow fashion involves small quantity of unique products (i.e. exclusivity) by local resources (i.e. localism) and traditional technique (i.e. authenticity) requiring more time on pieces of clothes, big companies' economy of scale strategy does not fit the slow fashion business model. Instead, it can thrive in small-scale businesses such as family business. Therefore, the slow fashion business model would aid the revival of the US small apparel businesses in particular.

Furthermore, slow fashion may broaden a range of consumer's choices. Imports from far-east Asia have tended towards fashion basic items as shipment in large amounts in a batch has cost efficiency, and far distance makes it difficult to reflect up-to-date demand (Dana *et al.*, 2007). Even worse, mass retailers force smaller producers, who cannot compete on price and volume, out of business, and young and independent designers have trouble seeking appropriate manufacturers and retailers to produce and buy their design in the US in spite of their entrepreneurial spirit and creativity (Rantisi, 2002). In contrast to the US, niche and innovative fashion products are key assets of European countries such as Italy and France. Focusing on craftsmanship and unique fashion product, these countries have entrepreneurial apparel supply chains by organizing innovative networks of small-scale businesses (Doeringer and Crean, 2006). Considering the size of the US, the apparel supply chains can be structured on a local scale. By capitalizing on local resources (i.e. localism dimension), slow fashion may help revitalize the local economy. In addition, when combining young and independent designer's innovative spirit with local resources such as local artisan, slow fashion is likely to lead to fashion diversity (i.e. exclusivity dimension). For example, in the slow fashion system, quality products are made by hand (i.e. authenticity dimension), and each piece of product denotes local history and tradition (i.e. localism dimension). As available resources and tradition varies from region to region, and not every hand-made product is the same unlike standardized

products from machines, consumers may possess distinctive apparel items in slow fashion.

Although the developed scale will provide a very important starting point, more surveys with various samples are required in order to enhance reliability and validity of the scale. With the concrete scale, a number of slow fashion-related topics can be studied in the future. For example, investigation of consumer profile based on socio-demographic information is possible to foresee the potential consumer segment of slow fashion. Also, slow fashion can be further compared with fast fashion in terms of consumer attitude towards each fashion practice. Indeed, attitude toward slow fashion may vary by generations in that young people would prefer buying a number of low-quality, cheap and fashionable clothes, whereas the older generation would prefer a smaller number of higher quality clothes (Bhardwaj and Fairhurst, 2010). As the slow fashion movement has appeared recently, it is hoped that this study serves as a good start of a theoretical attempt, and this initiative work provides a new perspective to mass consumption oriented marketing practices.

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