

## Sustainable clothing: perspectives from US and Chinese young Millennials

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### Abstract:

**Purpose:** The purpose of this paper is to understand US and Chinese young Millennials' perceptions of and consumption behaviour towards sustainable apparel products. **Design/methodology/approach:** Quantitative research was conducted, and empirical data were collected from 590 US college students and 379 Chinese college students. **Findings:** For both US and Chinese young Millennials, this study provides consistent empirical results of the positive and significant effects of young Millennials' apparel sustainability knowledge and personal values on consumer attitude towards sustainable clothing, which in turn positively and strongly impacts purchase intention. In addition, a cross-cultural comparative analysis reveals similarities and differences regarding apparel sustainability knowledge and values between young Millennial consumers in the US and China. **Originality/value:** The scale of environmental and social impacts from global apparel production and consumption makes sustainability increasingly important in the contemporary business environment. Young Millennials in the US and China represent large and influential consumer segments for sustainable consumption. This study contributes to the literature by surveying young Millennials in the US (developed market) and China (emerging market) in a cross-cultural context. The study offers insights into the global apparel industry in developing strategies for expanding sustainable apparel markets in the US and China.

**Keywords:** Value | Apparel | Millennial generation | Sustainability knowledge | Sustainable clothing | The USA and China

### Article:

#### Introduction

Sustainable clothing, considered as environmentally and socially responsible apparel products, has been described as clothing which incorporates one or more aspects of social and environmental sustainability, such as fair trade principles with sweatshop-free labour conditions while not harming the environment or workers, using biodegradable materials and/or organic cotton (Chang and Watchravesringkan, 2018; Goworek *et al.*, 2012; Harris *et al.*,

2016; Henninger *et al.*, 2016; Joergens, 2006; McNeill and Moore, 2015). Specific understanding of sustainability issues in the apparel industry is important, as producing and retailing apparel products represent a large industry with great adverse environmental and social impacts (Goworek *et al.*, 2012; Hill and Lee, 2012; Ritch, 2015; Rothenberg and Matthews, 2017). The apparel industry, an ideal exemplifier of the global supply chain (Su, 2013), is characterized by the intense use of chemical products and natural resources, significant issues with the generation of waste and heavily criticized labour practices and conditions. Few industries have attracted as much public attention as the apparel industry, and few are more challenged by sustainability concerns that have recently emerged in the media and public (Caniato *et al.*, 2012). In recent years, issues of environmental protection and social equity in the apparel industry have received increased attention, with apparel firms implementing a variety of environmentally and socially responsible initiatives throughout their supply chains (Dickson *et al.*, 2009; Goworek *et al.*, 2012; Park and Kim, 2016). As the industry works towards being more environmentally and socially conscious, it is equally important to involve consumers in the process and encourage utilization of sustainable apparel products.

Given the growing presence of sustainable products in US and Chinese markets, this study attempts to investigate US and Chinese young Millennial consumers' perspectives and consumer behaviour towards sustainable apparel products. Particularly, the study has two purposes. First, the study specifically aims to investigate the role of young Millennials' values and apparel sustainability knowledge in impacting their attitude and willingness to purchase sustainable clothing. Literature supports the assertion that knowledge is a determinant of eco-conscious consumer behaviours, and a lack of knowledge is a constraint (Hill and Lee, 2012; Connell, 2010; Hwang *et al.*, 2015; Rothenberg and Matthews, 2017). Studies have also shown that values influence behavioural decisions and values, as abstract cognitions serve as standards for attitudinal and behavioural processes (Cai and Shannon, 2012; Ma and Lee, 2012). Consumers' personal values are associated with the formation of beliefs and attitudes and often influence intentions to behave in a certain way (Ajzen and Fishbein, 1980). Our review of relevant literature indicates a lack of empirical research that systematically examines how young Millennial consumers' apparel sustainability knowledge and their personal values impact their attitudes towards sustainable apparel consumption.

Second, the study is designed to conduct a cross-cultural comparative analysis to understand similarities and differences between the USA (developed market) and China (emerging market) by investigating Millennial consumers' apparel sustainability knowledge and values. Furthermore, the study examines whether apparel sustainability knowledge and values impact consumer attitude and willingness to buy sustainable apparel products in a similar manner in both countries. There is a rising interest in sustainable consumption and production in traditional innovation leaders such as the USA and in rising innovators such as China (United Nations, 2015). As indicated in the United Nations report, China stands out as the clearest example in recent decades of how the industrial transformation of an economy impacts social transformation (United Nations, 2015). In terms of the global apparel market size, the USA and China are the top two countries – the US apparel market is expected to grow from US\$225bn in 2012 to US\$385bn in 2025, while China's apparel market is expected to grow from US\$150bn in 2012 to US\$615bn in 2025 (Statista, 2019). The contemporary scale of clothing consumption in the USA and China calls for sustainable consumer behaviour. Millennials in both the USA and China

represent powerful emerging consumers for the apparel industry's sustainability initiatives (Nielsen, 2016); however, they grew up in two different cultures. Thus, comparing Chinese and US Millennials in this study advances our understanding of sustainable apparel consumer behaviours in a cross-cultural context.

The study of sustainable consumer behaviour in an emerging market like China is important for three reasons. First, with the significant achievements of economic development from over 30 years of rapid urbanization and industrialization, China is facing serious environmental deterioration (Liu *et al.*, 2016; Schroeder, 2014). As China is a major powerhouse of global apparel production, it is undeniable that awareness of environmental and social problems, including pollution, labour issues and working conditions, has grown in recent years in China (Li and Wu, 2017; Song, 2017; Zhu and Sarkis, 2016). Second, Chinese consumers' increasing concern about sustainability pushes the apparel industry to develop a sustainable production and consumption system and drives the rapid increase in the size of the sustainable clothing market (Cerini, 2016; WGSN Insider, 2016). Interest in sustainable clothing production and consumption is growing, as evidenced by more apparel designers and businesses promoting a sustainable lifestyle in China (Lam, 2017; Song, 2017). Having a large consumer base, China's competitive advantage makes it an attractive market for sustainable apparel and textile products. Finally, most research on sustainable consumption has originated from, and focused on, western countries. Academic research attention to consumer's sustainable consumption behaviour in China has been very limited so far; therefore, more sustainable consumption research is needed from Chinese consumers' perspective and in a cross-cultural context (Geng *et al.*, 2017; Kolk *et al.*, 2010; Zhu and Sarkis, 2016).

This study offers potential contributions to the sustainable apparel consumption literature by empirically addressing the following research questions:

*RQ1.* Is there any difference between consumers in the USA and China on apparel sustainability knowledge?

*RQ2.* Is there any difference between consumers in the USA and China on personal values?

*RQ3.* How do consumer's apparel sustainability knowledge and values impact consumer attitude which in turn affects purchase intention towards sustainable apparel products?

*RQ4.* Do the consumer's apparel sustainability knowledge and values impact attitude and purchase intention towards sustainable apparel products in a similar manner for the USA and China?

In the following two sections, the relevant literature review and the research conceptual framework are presented. Subsequently, the research methodology is described, followed by the data analysis and results. Finally, the paper discusses the results, implications and future study directions.

## **Literature review**

## Millennials in the US and China: emerging powerful consumers for sustainable apparel products

Understanding Millennial shopper behaviour is essential in today's retail environment (Hall and Towers, 2017). The Millennial generation, born between 1980 and 2000, consists of the demographic cohort of 17–37 years old as of 2017 (Goldman Sachs Group, 2017). Millennials make up more than 30 per cent of the planet's population, which translates into 2.4bn people age 17–37 around the world (US Census Bureau, 2017). As a consumer group, it is just starting to flex its spending power, which will grow significantly in the coming years (Nielsen, 2016). Several empirical surveys identify Millennials worldwide as the most sustainable generation to date (Euromonitor International, 2016; Nielsen, 2015). Millennials seek products that are sustainable, ethical, artisanal, repairable and long lasting (Euromonitor International, 2016). In particular, the search for sustainable behaviour is pushing Millennials to adopt new consumer habits, more in line with their values, which translates into their willingness to pay more for eco-friendly and ethical products and services (Gazzola *et al.*, 2017).

There were about 92.97m Millennials (age 17–37) in the US in 2017, constituting about 28.7 per cent of the total US population (US Census Bureau, 2017). Millennials in the USA are the biggest generation in US history – even bigger than the Baby Boomers; they have grown up in a time of rapid change, giving them a set of priorities and expectations sharply different from previous generations (Goldman Sachs Group, 2017). Marketers have estimated that Millennials in the USA alone had spending power worth \$200bn (Solomom, 2015) annually by 2017. Previous research indicates the US Millennial generation is a main target consumer group for companies with sustainable attributes, and these young consumers represent a large and powerful consumer segment with a long future of potential consumer decisions, as they are only now entering young adulthood (Hill and Lee, 2012; Hwang *et al.*, 2015). According to a study from The NPD Group, US Millennials placed even greater weight on social consciousness: 78 per cent said it was important (Conley, 2015), and younger Millennial women (age 18–24) felt most strongly about corporate social responsibility, with the fact that 85 per cent rated it important to their shopping (Conley, 2015).

The Millennial generation in China has been growing up with China's rapid economic growth, a fact which affects their daily lives. In 2016, the total population in China was 1.37bn people; noticeably, the population count in the age group of 16–36 was about 434.1m people, constituting about 31.6 per cent of China's total population (US Census Bureau, 2017). To put the power of this consumer segment into perspective, the head count of China's Millennials alone is more than the entire US population, which was about 324m in 2016 (US Census Bureau, 2017). Chinese Millennials have become the country's biggest consumer group (Wang, Y., 2017) and are considered one of the most important market segments for apparel products (O'Cass and Choy, 2008). Retailers have been attracted to this consumer segment due to its size and emerging consumer spending power. Most Chinese Millennials are the only child in their families, and they represent a generation of young adults whose lifestyle is quite different from previous generations (Podoshen *et al.*, 2011; Wang, H.H., 2017; Yang *et al.*, 2018; Yi *et al.*, 2010). They are technologically connected to the global marketplace. They highly regard the power of economic freedom, social freedom and are aware of emerging global, social, technological and cultural issues (O'Cass and Siahtiri, 2014; Wang, H.H., 2017; Yang *et al.*, 2018). This generation

appreciates sustainable lifestyles and is interested in health and well-being issues in China, as sustainability is heavily promoted through all channels in China (Geng *et al.*, 2017; Zhu and Sarkis, 2016). As with their US counterparts, young Chinese consumers' perceptions of and attitudes towards sustainable clothing have hardly been studied thus far. Due to the huge social and cultural impacts the young Millennial generation plays in society and their market potential in the apparel retail industry, understanding young Chinese Millennials' views provides valuable and comparable insights to global sustainable apparel marketers.

### Apparel sustainability knowledge

Sustainability knowledge has been studied in the literature, and authors such as Dickson (2000) and Shen *et al.* (2012) reported that respondents admit they are not knowledgeable of sustainability issues. We would expect that knowledge and concern are increasing in part due to promotion of scientific studies and social campaigns in media. In 2010, Kozar and Hiller Connell (2010) reported that half of their sample (55 per cent) indicated being knowledgeable about apparel firms operating in a socially responsible manner. Additionally, their respondents felt informed about issues surrounding domestic (49 per cent) and foreign (62 per cent) clothing manufacturing.

McDonald *et al.* (2009) found that consumers process sustainability in decision making differently among product categories. General environmental concern may not carry over to the apparel industry specifically (Gam, 2011; Connell, 2010). Even with an increasing universal awareness of environmental and ethical issues, consumers who purchase apparel are often confused by the meaning of sustainability (Connell, 2010). Previous studies found that consumers have a broad awareness of environmental issues and lack knowledge specific to the apparel industry (Gam and Banning, 2011; Connell, 2010). Even environmentally conscious consumers have little knowledge of the environmental impact of apparel purchases (Connell, 2010). The notion of ethical clothing is complex, as reflected by the use of various terms such as eco, organic, fair trade or recycled apparel. In addition, inclusion of sustainability in apparel purchasing decisions may be especially complicated due to additional evaluative criteria such as fit and aesthetic preferences (Gam, 2011; Connell, 2010).

### Schwartz values

Values are abstract principles that are central to an individual's self-concept. They act as guides for assessing situations and determining an individual's social and ideological positions (Bardi and Schwartz, 2003; Ladhari and Tchegna, 2015; Schwartz, 1992, 1994). Schwartz defined a value as a belief pertaining to desirable end states or modes of conduct that transcends specific situations, guides selection or evaluation of behaviour, people and events, and is ordered by importance relative to other values to form a system of value priorities (Schwartz, 1992, 1994). Values are important for understanding various social and psychological phenomena (Bardi and Schwartz, 2003) and are believed to play the role of fundamental beliefs that direct or motivate our behaviours and decision making. Bardi and Schwartz (2003) maintained that people might act in accordance with their values even when they do not consciously think about them; thus, values may operate outside of awareness but are available for retrieval from memory. Values are

relatively stable motivational characteristics of persons that change little during adulthood (Bardi and Schwartz, 2003).

Based on universal requirements of human existence, Schwartz and Bilsky (1987) identified 56 values and specified a set of dynamic relations among the motivational types of values in an integrated manner. In total, 44 value items in their study have demonstrated substantial consistency of meanings across cultures (Bardi and Schwartz, 2003; Schwartz, 1994; Schwartz and Sagiv, 1995). The Schwartz (1992) value theory defines ten broad values according to the motivation that underlies each one, and the existence of ten value types has been empirically validated in many countries (Bardi and Schwartz, 2003). These ten value types include power, achievement, hedonism, stimulation, self-direction, universalism, benevolence, tradition, conformity and security (Table I). The pursuit of each value has psychological, practical and social consequences (Bardi and Schwartz, 2003). Furthermore, the ten value types were grouped into the four broader, most fundamental aspects of the Schwartz value system, including self-enhancement, self-transcendence, conservation and openness to change (Schwartz, 1992, 1994; Schwartz and Bilsky, 1987).

**Table I.** Definitions of types of values and the items that represent and measure them

Schwartz value dimensions and types		
Definition		Items
<b>Self-enhancement</b>		
Power	Social status and prestige, control or dominance over people and resources	Social power, authority, wealth
Achievement	Personal success through demonstrating competence according to social standards	Successful, capable, ambitious, influential
<b>Openness to change</b>		
Hedonism	Pleasure and sensuous gratification for oneself	Pleasure, enjoying life
Stimulation	Excitement, novelty, and challenge in life	Daring, a varied life, an exciting life
Self-direction	Independent thought and action-choosing, creating, exploring	Creativity, freedom, independent, curious, choosing own goals
<b>Self-transcendence</b>		
Universalism	Understanding, appreciation, tolerance and protection of the welfare of all people and of nature	Broadminded, wisdom, social justice, equality, a world at peace, a World of beauty, unity with nature, protecting the environment
Benevolence	Preservation and enhancement of the welfare of people with whom one is in frequent personal contact	Helpful, honest, forgiving, loyal, responsible
<b>Conservation</b>		
Tradition	Respect, commitment and acceptance of the customs and ideas that traditional culture or religion provide the self	Humble, accepting my portion in life, devout, respect for tradition, moderate
Conformity	Restraint of actions, inclinations, and impulses likely to upset or harm others and violate social expectations or norms	Politeness, obedient, self-discipline, honouring parents and elders
Security	Safety, harmony and stability of society, of relationships, and of self	Family security, national security, social order, clean, reciprocation of favours

Source: Bardi and Schwartz (2003)

## Conceptual framework and research hypotheses

### Theoretical grounding

The theories underlying this research include the hierarchical relationship between values, attitudes and behaviours (Homer and Kahle, 1988), Fishbein's attitude theory (Fishbein, 1963; Fishbein and Ajzen, 1975) and cultural perspective (Ferraro, 2005; Hofstede, 1980, 1991; Hofstede and Bond, 1988).

**Value–attitude–behaviour model.** Homer and Kahle's (1988) value–attitude–behaviour model integrates the interrelationships between values, attitudes and behaviours by positing a hierarchical influence of cognitions in which “the influence should theoretically flow from abstract values to mid-range attitudes to specific behaviours” (p. 638). Hence, the model implies a major flow of causation from values to attitudes to behaviour. Thus, the main feature of the model is its emphasis on the mediating role of attitudes on the values and behaviours relationship. Previous studies confirmed Homer and Kahle's value–attitude–behaviour hierarchy model in green consumer behaviour (do Paço *et al.*, 2013, 2019; Follows and Jobber, 2000; Jacobs *et al.*, 2018).

**Fishbein's attitude theory.** Fishbein's attitude theory (Fishbein, 1963; Fishbein and Ajzen, 1975) offers theoretical support for the study. According to Fishbein's attitude theory, a person's attitude is a function of his or her salient beliefs at a given time, and salient beliefs are those activated from memory and “considered” by the person in a given situation (Fishbein and Ajzen, 1975). The basic theoretical proposition of Fishbein's attitude theory is that it proposed a causal flow among three cognitive variables: beliefs, evaluations or attitudes and intentions (Mitchell and Olson, 1981). Knowledge shapes an individual's beliefs, and attitude is derived from a group of beliefs that one holds about the object of the behaviour (Ajzen and Fishbein, 1980). Fishbein's attitude theory has been widely applied in research studies regarding environmentally sustainable and ethical consumer behaviours (Chang and Watchravesringkan, 2018; Geng *et al.*, 2017; Paul *et al.*, 2016).

**Cultural perspective.** Culture is a system that is learned and reflected in behavioural patterns of members of a society; it is everything people have, think and do as members of their society (Ferraro, 2005). Hofstede's studies (Hofstede, 1980, 1991; Hofstede and Bond, 1988) identify five cultural dimensions including individualism (focus on self and immediate family) vs collectivism (concern for the extended group), large vs small power distance (expectance/acceptance of an unequal distribution of power), strong vs weak uncertainty avoidance, masculinity (assertiveness and ambitious) vs femininity (non-competitiveness and concern for relationships), and long- vs short-term orientation (cultural traits including persistence and thrift). Culture has a profound influence on all aspects of apparel and retail business operations and consumer behaviour. For example, culture impacts values, lifestyles and consumer intentions to purchase apparel products (O'Cass and Siahtiri, 2013; Seock and Lin, 2011; Xiao and Kim, 2009) and influences perceptions about ethical behaviour (Chung *et al.*, 2008; Vitell, 2015). Despite the emergence of a global market with young adults sharing similar consumer preferences, such as sustainable products, the existence of cultural and social differences should be acknowledged (Muralidharan and Xue, 2016).

The above theories provide justification for investigating US and Chinese young Millennials' perceptions of and consumption behaviour towards sustainable apparel products.

Integrating Homer and Kahle's (1988) value–attitude–behaviour theory and Fishbein's attitude theory (Fishbein, 1963; Fishbein and Ajzen, 1975), this study investigates how values and consumers' apparel sustainability knowledge impact attitude (consumer attitude towards sustainable apparel products) and how attitude further impacts behaviour intention (willingness to buy sustainable apparel products). Due to the profound influence of culture on values, belief, attitude and purchase intention, cultural perspective (Ferraro, 2005; Hofstede, 1980, 1991; Hofstede and Bond, 1988) helps understand similarities and differences between US and Chinese Millennials regarding their sustainable consumer behaviour in a cross-cultural context.

## Hypotheses development

Jensen (2002) argued that knowledge should be acknowledged as one of the important preconditions for developing competence leading to action and behavioural adjustments in relation to the environment. Limited knowledge about sustainable development is the first barrier for the public being involved in developing a sustainable society (Geng *et al.*, 2017). Sustainability knowledge is frequently a prerequisite to engaging in pro-environmental behaviours. Only when consumers know enough about sustainability can they be likely to purchase sustainable products (Harris *et al.*, 2016; Jensen, 2002; McNeill and Moore, 2015; Park and Kim, 2016; Paul *et al.*, 2016). Consumers with knowledge and concerns regarding environmental and societal issues would be motivated to purchase green and fair trade apparel (Goworek *et al.*, 2012; Hwang *et al.*, 2015; Rothenberg and Matthews, 2017). Researchers have determined that environmental sustainability knowledge is associated with developing attitudes and behavioural patterns that reflect concern for the environment and is a significant predictor of consumption behaviour of environmentally friendly apparel products (Chan, 2001; Chang and Watchravesringkan, 2018; Cowan and Kinley, 2014; Kang *et al.*, 2013; Ko and Jin, 2017). Hwang *et al.* (2015) reported that consumers' higher awareness of corporate social responsibility attributes had a positive effect on their purchase intentions. According to this line of reasoning, the following hypothesis is developed:

*H1.* Apparel sustainability knowledge has a significant positive direct effect on consumer attitude.

Values are central to consumers' consumption behaviours (Hiller and Woodall, 2018), are abstract principles central to an individual's self-concept and are an integral part of individuals' perception of self (Dickson, 2000; Schwartz, 1992). They act as guides for assessing situations and determining an individual's social and ideological positions (Dickson, 2000; Stern *et al.*, 1995). Values motivate action, giving it direction and emotional intensity (Schwartz, 1994). Values guide individuals' choices and behaviour and provide a basis for understanding why consumers behave in a certain way. Empirical research has shown that values are related to a variety of attitudinal and behavioural outcomes (Grankvist *et al.*, 2007; Thøgersen and Ölander, 2002). Several studies have linked sustainable or ethical behaviour to personal values (Chan, 2001; Dickson, 2000; Grankvist *et al.*, 2007; Hiller and Woodall, 2019; Lundblad and Davies, 2016; Sharma and Jha, 2017). Ma and Lee (2012) provided support that consumers' personal values have positive effects on their formation of beliefs, attitudes and purchase intentions pertaining to fair trade non-food products. Dickson (2000) maintained that values, along with



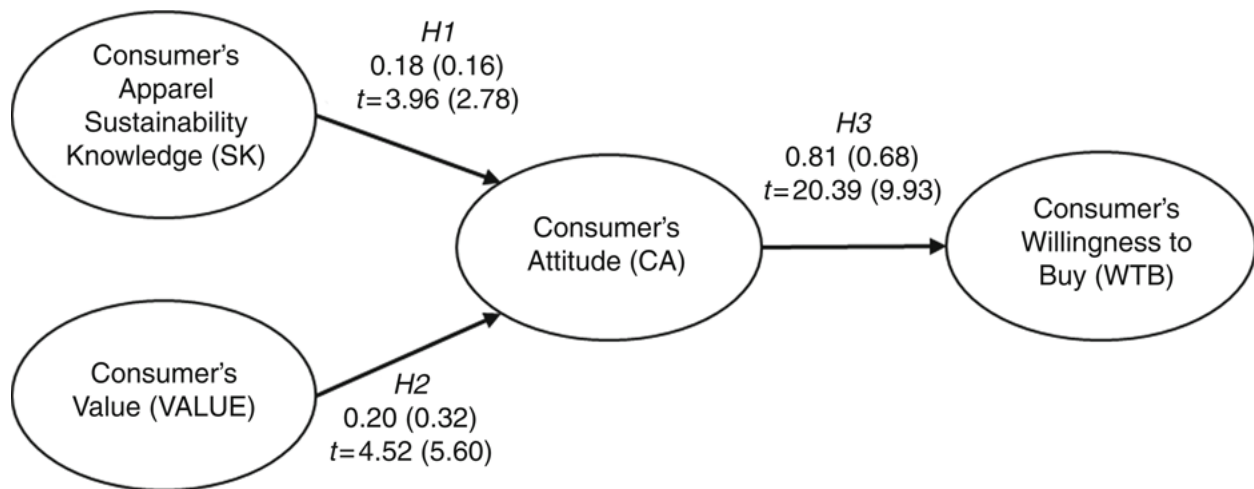
beliefs, knowledge and personal characteristics, serve as a base for the formation of attitudes. Thus, the following hypothesis is proposed:

*H2.* Values have a significant positive direct effect on consumer attitude.

Homer and Kahle’s (1988) value–attitude–behaviour model and Fishbein’s attitude theory (Fishbein, 1963; Fishbein and Ajzen, 1975) imply the flow of causation from values and belief (e.g. knowledge) to attitudes to specific behaviour. Intention is considered the precursor to and the best predictor of behaviour (Ajzen and Fishbein, 1980; Fishbein and Ajzen, 1975). Direct determinants of individuals’ behavioural intention are their attitudes towards performing the behaviour. Previous studies indicate that personal attitude is one of the key factors to motivate sustainable consumption behaviour (Chang and Watchravesringkan, 2018; Geng *et al.*, 2017; Hwang *et al.*, 2015; Kang *et al.*, 2013; Vermeir and Verbeke, 2006, 2008). For example, Chang and Watchravesringkan (2018) confirmed the positive relationship between environmental attitude and behavioural intentions to purchase sustainable apparel by surveying 235 US students. Kang *et al.* (2013) supported that behavioural intention would be influenced by attitude in the context of environmentally sustainable textiles and apparel consumption using data collected from a sample consisting of 701 students from three countries (USA, South Korea and China). Thus, the following hypothesis is proposed:

*H3.* Consumer attitude has a significant positive direct effect on willingness to buy sustainable apparel products.

Figure 1 shows the research conceptual model and the three hypotheses.



**Figure 1.** Research model and hypotheses

**Notes:** The path coefficients are in the sequence of US followed by Chinese in parentheses; the path coefficients in the figure are standardized parameter estimates; all the *t*-values for the standardized path coefficient are statistically significant at  $p < 0.01$

## Research method

A structured questionnaire was designed based on a careful review of pertinent literature. Sustainable clothing, also called environmentally and socially responsible apparel (Goworek *et*

*al.*, 2012), is described at the beginning of the questionnaire, and examples of sustainable clothing were provided. Cross-cultural comparisons are most valid when the protocols are as similar as possible (Callaghan *et al.*, 2005). The survey was first developed in English. A translation and a back-translation of the questionnaire were performed by two researchers who are fluent in both Chinese and English. Substantive differences during the translation process were rectified through discussion, and the resulting translated questionnaire was used to administer the Chinese survey task.

The consumer's apparel sustainability knowledge was measured on a five-point Likert-type scale ranging from "strongly disagree" (1) to "strongly agree" (5), adopting from Park and Kim (2016). Two items assess consumer knowledge of social responsibility issues in the apparel industry, including the statements "I am informed about child labour/sweatshop issues in the fashion apparel manufacturing business" and "I am knowledgeable about social equity issues (e.g. working conditions of factory workers, fair wage for factory workers) in the fashion apparel business". Two items assess consumer knowledge of environmental responsibility issues in the apparel industry, including the statements "I am informed about environmental issues (e.g. eco-fashion, environmental impact of clothing manufacturing) in the fashion apparel manufacturing business" and "I understand the environmental impact of apparel products across the supply chain". Another two items assess consumer knowledge of sustainable apparel business, including the statements "I know more about socially responsible apparel business than the average person" and "I am knowledgeable about apparel brands that sell environmentally friendly or socially responsible products". Means were calculated by averaging the two items of the consumer's social responsibility knowledge, environmental responsibility knowledge and sustainable apparel business knowledge, respectively. Thus, the three means were used for measuring the consumer's apparel sustainability knowledge construct.

We measured values with the Schwartz Value Survey (Schwartz, 1992). The survey lists 56 value items, each followed by a short definition in parentheses. Participants rated each value as a guiding principle in their own life on a five-point scale from 1 (not at all important) to 5 (extremely important). The 44 value items in the survey that have demonstrated nearly equivalent meaning around the world were used to index the ten value types (Bardi and Schwartz, 2003; Schwartz, 1994; Schwartz and Sagiv, 1995). Indexes were computed by averaging the importance ratings of the value items that represent each value type, listed in Table I. The four broader, most fundamental aspects of the Schwartz value system, including self-enhancement, self-transcendence, conservation and openness to change were calculated by averaging the relevant value types (Table I). Four items of measuring consumer attitude were adapted from Chan (2001) on a five-point semantic differential scale. Three items adopted from Sweeney *et al.* (1999) were used to measure consumers' willingness to purchase sustainable clothing products on a five-point Likert-type scale after modification to the research specific context.

After receiving Institutional Review Board approval, data were collected from a midsize university in the Southeast USA for the US sample and from a Chinese university in Shanghai, China for the Chinese sample. Within both the US university and the Chinese university, survey respondents were recruited randomly. We used a sample of college students in the study because the majority of young Millennials are college students, and we wanted to rule out possible

interference from socio-demographic variables like age, income or social class. Younger Millennials will soon be powerful consumers who should be capable of making a difference in the next 50 years, making this segment a high priority target for marketers worldwide (Heo and Muralidharan, 2019). In addition, college students (and younger Millennials, in general) have a higher level of awareness of the concept of sustainability (Conley, 2015).

The two-step structural equation modelling approach was conducted using LISREL 9.1. First, the measurement model was evaluated using confirmatory factor analysis to demonstrate adequate model fit and ensure a satisfactory level of measure reliability and validity for the underlying variables and their respective factors in the model. Second, the structural model was tested to examine the research hypotheses.

## Data analysis and results

### Sample characteristics

A total of 621 responses were received from data collection in the USA, and 590 were valid for this study. Of these, 43.4 per cent were from male, and 55.6 per cent were from female; 51.2 per cent were 18–20 years old, and 43.2 per cent were 21–25 years old. The most prevalent ethnic group was Caucasian (44.6 per cent), followed by African–American (30.1 per cent), Asian (13.6 per cent) and Hispanic (6.6 per cent).

A total of 430 responses were received from Shanghai, China, and 379 were valid and complete responses. Of these, around 82.6 per cent were from sophomores or juniors; 25.3 per cent were from male and 74.7 per cent were from female; 45.4 per cent were 18–20 years old; 45.9 per cent were 21–23, and 6.3 per cent were 24–26. The college student population in Shanghai, China is comparable to the college student population in the USA.

### **Apparel sustainability knowledge and Schwartz's values: US vs Chinese young Millennials.**

Table II shows the comparative analysis results between the US and Chinese young Millennials regarding apparel sustainability knowledge and Schwartz's values. The mean scores of the US young Millennials' apparel sustainability knowledge are in the range between 2.909 (sustainable business knowledge) and 3.577 (social responsibility knowledge), while the mean scores of Chinese young Millennials' apparel sustainability knowledge range between 2.511 (sustainable business knowledge) and 2.809 (social responsibility knowledge). The mean scores of US young Millennials' ten value types are in the range between 3.251 (power) and 4.435 (benevolence), while the mean scores of Chinese young Millennials' ten value types are in the range between 3.281 (power) and 4.241 (hedonism).

To address the first two research questions, a series of independent samples *t*-tests were conducted between the US and Chinese respondents (Table II). A significant difference occurred between the US and Chinese young Millennials in relation to their apparel social responsibility knowledge ( $t=13.055$ ;  $p<0.001$ ), apparel environmental responsibility knowledge ( $t=6.521$ ;  $p<0.001$ ) and sustainable apparel business knowledge ( $t=7.201$ ;  $p<0.001$ ). US young Millennials reported significantly higher levels of apparel social responsibility knowledge ( $M_{US}=3.577$ ;  $M_{Chinese}=2.819$ ), apparel environmental responsibility knowledge

( $M_{US}=3.170$ ;  $M_{Chinese}=2.792$ ) and sustainable apparel business knowledge ( $M_{US}=2.909$ ;  $M_{Chinese}=2.511$ ) than did Chinese young Millennials. Thus, these comparative analysis results provide evidence to address *RQ1*.

**Table II.** Mean difference in apparel sustainability knowledge and value types between the US and Chinese samples

	US ( $n=590$ )		Chinese ( $n=379$ )		<i>t</i> -value
	Mean	SD	Mean	SD	
<b><i>Apparel sustainability knowledge</i></b>					
Apparel social responsibility knowledge	3.577A	0.988	2.819A	0.807	13.055***
Apparel environmental responsibility knowledge	3.170B	0.984	2.792A	0.807	6.521***
Sustainable apparel business knowledge	2.909C	0.959	2.511B	0.752	7.201***
<b><i>Schwartz value dimension and value types</i></b>					
Self-transcendence					
Universalism	4.235CD	0.585	4.019B	0.558	5.718***
Benevolence	4.435A	0.550	4.004B	0.620	11.028***
Conservation					
Tradition	3.875F	0.688	3.693C	0.574	4.445***
Conformity	4.301BC	0.641	4.053B	0.614	5.987***
Security	4.137D	0.585	4.234A	0.500	-2.764**
Self-enhancement					
Power	3.251G	0.834	3.281E	0.718	-0.607
Achievement	4.363AB	0.579	3.748C	0.658	14.865***
Openness to change					
Hedonism	4.275BC	0.611	4.241A	0.637	0.831
Stimulation	4.016E	0.713	3.531D	0.757	10.090***
Self-direction	4.392AB	0.505	4.099AB	0.548	8.361***

**Notes:** SD, standard deviation. ABCDEFG denotes group differences by Tukey HSD *post hoc* analysis ( $\alpha=0.05$ ). \*\* $p < 0.01$ ; \*\*\* $p < 0.001$

The *t*-tests also revealed that there is a significant difference between US and Chinese young Millennials in eight Schwartz value types, including achievement ( $t=14.865$ ,  $p < 0.001$ ), stimulation ( $t=10.090$ ,  $p < 0.001$ ), self-direction ( $t=8.361$ ,  $p < 0.001$ ), universalism ( $t=5.718$ ,  $p < 0.001$ ), benevolence ( $t=11.028$ ,  $p < 0.001$ ), tradition ( $t=4.445$ ,  $p < 0.001$ ), conformity ( $t=5.987$ ,  $p < 0.001$ ) and security ( $t=-2.764$ ,  $p < 0.01$ ). Specifically, US young Millennials placed greater importance on achievement ( $M_{US}=4.363$ ;  $M_{Chinese}=3.748$ ), stimulation ( $M_{US}=4.016$ ;  $M_{Chinese}=3.531$ ), self-direction ( $M_{US}=4.392$ ;  $M_{Chinese}=4.099$ ), universalism ( $M_{US}=4.235$ ;  $M_{Chinese}=4.019$ ), benevolence ( $M_{US}=4.435$ ;  $M_{Chinese}=4.004$ ), tradition ( $M_{US}=3.875$ ;  $M_{Chinese}=3.693$ ) and conformity ( $M_{US}=4.301$ ;  $M_{Chinese}=4.053$ ), while Chinese young Millennials placed more importance on security ( $M_{US}=4.137$ ;  $M_{Chinese}=4.234$ ). However, for the two value types (i.e. power and hedonism), no significant differences were found between US and Chinese young Millennials. Therefore, these results provide evidence to address *RQ2*.

### The measurement model

Evaluation of the measurement model was conducted using confirmatory factor analysis to examine the relationships between the indicator variables and their respective underlying factors. Multiple fit indexes were used to examine the model fit (Kelloway, 1998): the root mean squared error of approximation (RMSEA), the goodness of fit index (GFI), normed fit index (NFI), non-normed fit index (NNFI), comparative fit index (CFI), etc. Reliability and convergent validity

analyses were conducted using the average variance extracted (AVE) and composite reliability coefficient for a given construct. The evaluation of discriminant validity is based on the Fornell and Larcker's (1981) criterion by comparing each construct's AVE value with the squared inter-construct correlation of that construct with all other constructs in the structural model. We also employed the confidence test to assess the discriminant validity. The confidence test requires that the correlation between two latent constructs plus or minus two standard errors does not include one. Results revealed that these conditions were met.

**Table III.** Measurement model results (the US sample)

Indicator variables and their underlying factors	Standardized factor loading	<i>t</i> -value	<i>R</i> <sup>2</sup>	Composite reliability	AVE
Apparel sustainability knowledge (Cronbach's $\alpha=0.789$ )				0.798	0.575
V1 – knowledge about social responsibility issues in the apparel industry	0.60	14.71	0.36		
V2 – knowledge about environmental responsibility issues in the apparel industry	0.86	21.36	0.74		
V3 – knowledge about apparel sustainable business Value (Cronbach's $\alpha=0.841$ )	0.79	19.45	0.62	0.844	0.579
V4 – self-transcendence	0.84	23.50	0.71		
V5 – conservation	0.82	22.53	0.67		
V6 – self-enhancement	0.60	15.16	0.36		
V7 – openness to change	0.76	20.35	0.57		
Consumer attitude (Cronbach's $\alpha=0.919$ )				0.920	0.745
V8 – I _____ the idea of purchasing ESRAP (dislike...like)	0.85	25.05	0.71		
V9 – purchasing ESRAP is a _____ idea. (good...bad)	0.82	23.72	0.67		
V10 – I have a/an _____ attitude towards purchasing ESRAP. (unfavourable...favourable)	0.89	27.14	0.79		
V11 – I have a _____ attitude towards purchasing ESRAP. (negative...positive)	0.89	27.27	0.79		
Willingness to buy (Cronbach's $\alpha=0.868$ )				0.877	0.708
V12 – I would consider buying ESRAP	0.89	26.78	0.79		
V13 – I am willing to purchase ESRAP	0.91	27.79	0.83		
V14 – there is a strong likelihood that I will buy ESRAP	0.71	19.30	0.50		
Fit indices			Value		
Root mean squared error of approximation (RMSEA)			0.098		
Normed fit index (NFI)			0.94		
Non-normed fit index (NNFI)			0.93		
Comparative fit index (CFI)			0.95		
Goodness of fit index (GFI)			0.89		
Adjusted goodness of fit index (AGFI)			0.84		

**Notes:** Valid  $n=590$ . ESRAP, environmentally and socially responsible apparel products; AVE, average variance extracted. All *t*-values are statistically significant at  $p<0.01$

**The US sample.** The fit indexes included in Table III show that an acceptable fit is achieved for the measurement model: RMSEA=0.098; GFI=0.89; NFI=0.94, NNFI=0.93; CFI=0.95 (Table III). Table III also reports a summary of the factor loadings (standardized), *t*-values, and reliability and validity analyses in the measurement model. The *t*-values of all the path parameter estimates for each factor in the measurement model are greater than 2.58; therefore, all the path parameter estimates are statistically significant with  $p<0.01$ . As shown in Table III, all the composite reliability coefficients vary from 0.798 to 0.920 and are far above the acceptable guideline (0.60) which DeVellis (2003) suggested, indicating strong support for the construct reliability. The AVEs vary from 0.575 to 0.745 and are greater than the criteria of 0.50,

suggesting adequate convergent validity (Fornell and Larcker, 1981). The comparisons between the AVEs and the squared correlations between latent constructs show acceptable discriminant validity (Table IV). The results from evaluation of the measurement model indicate that the measurement model is adequate for testing the proposed structural model.

**Table IV.** Discriminant validity of the measurement model (the US sample)

	Apparel sustainability knowledge	Values	Consumer attitude	Willingness to buy
Apparel sustainability knowledge	0.575	0.15	0.29	0.28
Value	0.003	0.579	0.29	0.30
Consumer attitude	0.036	0.044	0.745	0.85
Willingness to buy	0.032	0.048	0.656	0.708

**Notes:** The elements on the diagonal represent the average variance extracted AVE; the elements below the diagonal are squared inter-factor correlation estimates; the elements above the diagonal are the upper bounds of the 95% confidence intervals for the inter-factor correlations

**Table V.** Measurement model results (the Chinese sample)

Indicator variables and their underlying factors	Standardized factor			Composite reliability	AVE
	loading	t-value	R <sup>2</sup>		
Apparel sustainability knowledge (Cronbach's $\alpha=0.806$ )				0.790	0.559
V1 – knowledge about social responsibility issues in the apparel industry	0.63	12.32	0.40		
V2 – knowledge about environmental responsibility issues in the apparel industry	0.80	14.86	0.65		
V3 – knowledge about apparel sustainable business	0.80	15.69	0.63		
Value (Cronbach's $\alpha=0.851$ )				0.855	0.605
V4 – self-transcendence	0.93	22.63	0.86		
V5 – conservation	0.88	20.98	0.78		
V6 – self-enhancement	0.54	10.86	0.29		
V7 – openness to change	0.70	15.08	0.49		
Consumer attitude (Cronbach's $\alpha=0.853$ )				0.860	0.606
V8 – I _____ the idea of purchasing ESRAP (dislike...like)	0.72	15.29	0.51		
V9 – purchasing ESRAP is a _____ idea. (good...bad)	0.75	16.39	0.57		
V10 – I have a/an _____ attitude towards purchasing ESRAP. (unfavourable...favourable)	0.83	18.93	0.69		
V11 – I have a _____ attitude towards purchasing ESRAP. (negative...positive)	0.81	18.28	0.66		
Willingness to buy (Cronbach's $\alpha=0.827$ )				0.828	0.615
V12 – I would consider buying ESRAP	0.73	15.45	0.54		
V13 – I am willing to purchase ESRAP	0.80	17.35	0.64		
V14 – there is a strong likelihood that I will buy ESRAP	0.82	17.93	0.67		
Fit indices		Value			
Root mean squared error of approximation (RMSEA)		0.076			
Normed fit index (NFI)		0.94			
Non-normed fit index (NNFI)		0.95			
Comparative fit index (CFI)		0.96			
Goodness of fit index (GFI)		0.92			
Adjusted goodness of fit index (AGFI)		0.89			

**Notes:** Valid  $n=379$ . ESRAP, environmentally and socially responsible apparel products; AVE, average variance extracted. All  $t$ -values are statistically significant at  $p<0.01$

**The Chinese sample.** Table V shows the fit indexes used in assessing measurement model fit, and a satisfactory fit is achieved for the measurement model: RMSEA=0.076; GFI=0.92; NFI=0.94; NNFI=0.95; CFI=0.96 (Table V). A summary of the factor loadings (standardized),  $t$ -

values, and reliability and validity analyses in the measurement model is also shown in Table V. The *t*-values of all the path parameter estimates for each factor in the measurement model are greater than 2.58; therefore, all the path parameter estimates are statistically significant with  $p < 0.01$ . As shown in Table V, the composite reliability coefficients (ranging from 0.790 to 0.860) and the AVEs (varying from 0.559 to 0.615) are acceptable. In addition, the analysis of discriminant validity is also acceptable (Table VI).

**Table VI.** Discriminant validity of the measurement model (the Chinese sample)

	Apparel sustainability knowledge	Values	Consumer attitude	Willingness to buy
Apparel sustainability knowledge	0.559	0.19	0.28	0.28
Value	0.005	0.605	0.42	0.42
Consumer attitude	0.026	0.102	0.606	0.75
Willingness to buy	0.068	0.102	0.449	0.615

**Notes:** The elements on the diagonal represent the average variance extracted AVE; the elements below the diagonal are squared inter-factor correlation estimates; the elements above the diagonal are the upper bounds of the 95% confidence intervals for the inter-factor correlations

### The structural model

**The US sample.** An acceptable fit is achieved for the structural model: RMSEA=0.097; GFI=0.89; NFI=0.94; NNFI=0.93; CFI=0.95. The results from evaluation of the structural model are shown in Figure 1. For the US sample, the structural equation model supports the relationships stated in *H1* (apparel sustainability knowledge – consumer attitude, standardized path coefficient=0.18,  $t=3.96$ ,  $p < 0.001$ ), *H2* (values – consumer attitude, standardized path coefficient=0.20,  $t=4.52$ ,  $p < 0.001$ ) and *H3* (consumer attitude – willingness to buy, standardized path coefficient=0.81,  $t=20.39$ ,  $p < 0.001$ ), demonstrating that consumer’s apparel sustainability knowledge and personal values positively and strongly affect consumer attitude, which in turn positively and strongly affects consumer willingness to buy sustainable clothing products.

**The Chinese sample.** An acceptable fit is achieved for the structural model: RMSEA=0.078; GFI=0.92; NFI=0.94; NNFI=0.94; CFI=0.95. As shown in Figure 1, for the Chinese sample, the structural equation model supports the relationships stated in *H1* (apparel sustainability knowledge – consumer attitude, standardized path coefficient=0.16,  $t=2.78$ ,  $p < 0.01$ ), *H2* (values – consumer attitude, standardized path coefficient=0.32,  $t=5.60$ ,  $p < 0.001$ ) and *H3* (consumer attitude – willingness to buy, standardized path coefficient=0.68,  $t=9.93$ ,  $p < 0.001$ ). Thus, consumer’s apparel sustainability knowledge and personal values positively and strongly affect consumer attitude, which in turn positively and strongly affects consumer willingness to buy sustainable clothing products.

### Discussion and implications

The present study was the first to step in systematically and investigate the relationships among young Millennials’ apparel sustainability knowledge, values, attitude and purchase intention in a cross-cultural context. Although more apparel companies have been concerned with integrating environmental and social considerations into business strategies and practices, a holistic view of young Millennial college students’ sustainability knowledge about the apparel industry, their values and perceptions of sustainable clothing has not been sufficiently examined in academia, especially examining young consumers from different countries. Thus, this study contributes to

the literature by surveying young Millennials in the USA (developed market) and China (emerging market) to empirically investigate these issues in a cross-cultural context. The study's findings provide valuable baseline information for both US and Chinese textile and apparel marketers.

This study provides a comparison of current US and Chinese young Millennials' apparel sustainability knowledge, which addresses *RQ1*. Previous studies suggested that consumers expressed positive sentiments towards sustainability in general, but they lacked knowledge on socially responsible practices in the apparel industry (Gam and Banning, 2011; Hill and Lee, 2012; Connell, 2010; Hwang *et al.*, 2015). In the present study, US young Millennials reported significantly higher levels of apparel social responsibility knowledge, environmental responsibility knowledge and sustainable apparel business knowledge than Chinese young Millennials, thus answering *RQ1*.

Furthermore, the results show that US young Millennials have a medium level of knowledge of sustainability issues in the apparel industry, while Chinese young Millennials have insufficient knowledge of sustainability issues in the apparel industry. These results confirm previous research stating that environmentally and socially responsible consumer behaviour may not be catching on because educating consumers has not been a priority of industry (Dickson, 2000). Educating young consumers in the USA and China should be a long-term goal for the apparel and retail industry. Since environmental and social issues in the apparel industry have only recently reached prominence in the media in China, typical clothing consumers may feel inadequately informed or confused about actual industry conditions. Particularly, the Chinese apparel and retail industry should take advantage of educational opportunities to enhance young consumers' apparel sustainability knowledge. Collaboration between Chinese higher education institutions and the Chinese apparel industry should be encouraged. Another noticeable finding related to *RQ1* shows that among all the sustainability issues in the apparel industry, young consumers are more aware of environmental impact and social issues than sustainable clothing brands or business, providing valuable marketing implications to US and Chinese apparel companies. Marketers in the USA and China need to make more efforts to promote their sustainable apparel businesses to increase consumer awareness of their sustainable apparel products/brands. For example, firms can utilize various types of advertisements to enhance consumers' knowledge of sustainable apparel business. As social media explodes in popularity among young Millennials, marketers may seek to transform their sustainable apparel businesses with social media. Social media content is updated rapidly and spreads virally; thus, social media platforms provide efficient and effective communication with consumers regarding a firm's sustainable product or brand performance.

The results for *RQ2* indicate that young US and Chinese consumers differ in their values. Furthermore, the results imply that although cultural contexts should be considered when examining consumers' personal values, young Chinese consumers tend to emphasize certain values more than general members of Chinese culture. From a cultural perspective, the USA is in the higher ranking of individualism and the lower rankings of power distance and long-term orientation, while China is in the higher rankings of power distance and long-term orientation and the lower ranking of individualism. The findings of comparing ten value types between US and Chinese young Millennials indicate that US young Millennials attached greater importance



to all value types except power, hedonism and security. There is no significant difference between US and Chinese young Millennials in terms of power and hedonism; young Millennials in both countries rated power as least important. Chinese young Millennials placed higher importance on security than their US counterparts. For US young Millennials, benevolence, self-direction and achievement are the three value types rated as most important, while stimulation, tradition and power are three value types not rated as high as other values. For Chinese young Millennials, hedonism, security and self-direction are the three value types rated as most important, while achievement, tradition, stimulation and power are four value types not rated as high as other values.

These study findings provide practical implications to apparel business practitioners as values affect the way people interpret information, and people are likely to act in ways that promote attaining their important values. For example, considering that both US and Chinese young Millennials tend to attribute the least importance to power, when marketing sustainable clothing to young consumers in both the USA and China, apparel marketers should avoid emphasizing the products/brands' characteristics related to power (social status and authority). Another implication would be developing different marketing strategies to recognize that young consumers in different cultures emphasize different aspects of values; therefore, global marketers need to customize their products/brands to reflect the relevant aspects of values in the specific culture context. The values reflected by the image of a sustainable apparel brand/product should be meaningful to its target consumers and match the target consumers' personal values well. For example, it would be more effective for sustainable apparel marketers to promote sustainable apparel products/brands' image related to benevolence (preservation and enhancement of the welfare of people) and self-direction (independent thought and action-choosing, creating, exploring) when they target US young consumers. For Chinese young consumers, sustainable apparel products/brands' image related to hedonism (pleasure and enjoying life) and security (safety, harmony and clean) should be the key elements in marketing communication.

For US and Chinese young Millennials, this cross-cultural study provides consistent empirical results of the positive and significant effects of young Millennials' apparel sustainability knowledge and personal values on consumer attitude towards sustainable clothing, which in turn positively and strongly impacts purchase intention, thus addressing the two research questions, *RQ3* and *RQ4*. The results empirically confirm previous research on the importance of sustainability knowledge and the integral role of values in consumer behaviour towards sustainable products. Even though there are some differences between US and Chinese young Millennials in terms of their apparel sustainability knowledge and personal values, the impacts of apparel sustainability knowledge and personal values on consumer attitude are both positive and significant for both US and Chinese contexts. Thus, apparel sustainability knowledge underlies attitudes consumers form about the apparel industry, and personal values play a vital role in shaping attitudes and behaviours towards sustainable products.

The results for addressing research questions *RQ3* and *RQ4* provide valuable implications for apparel businesses in both the USA and China. US and Chinese textile and apparel marketers should make efforts to develop and design communication strategies and educational programs to educate young Millennials about the attributes and benefits of sustainable clothing and effectively promote their sustainable clothing products by connecting to young consumer's

beliefs, values and lifestyle. Considering the essential role of apparel sustainability knowledge in consumer's sustainable behaviour, apparel firms in the USA and China may need to focus on developing some educational strategies in their sustainable apparel products marketing in hopes of enhancing Millennials' willingness to purchase sustainable apparel. For example, literature provided ideas to increase consumer purchase intention such as using attractive hangtags on garments in retail stores and extensive editorial space in catalogues to inform consumers about the people who make the products (Dickson, 2000; Hyllegard *et al.*, 2014). A recent study by Bezençon and Etemad-Sajadi (2015) indicated that sustainable labels contribute to product/brand positioning by improving consumer perception of ethicality, which indirectly increases retail patronage and business performance. Regarding the integral role of personal values in consumer's sustainable behaviour, it is important for apparel marketers to position their sustainable products with values that align with personal values the target consumers attach most. Literature indicates, for most of Schwartz values, greater importance of the values in consumers' mind leads to consumers' increased positive beliefs about and attitudes towards socially responsible business practices (Dickson and Littrell, 1996; Ma and Lee, 2012). Moreover, due to the fact that values are deeply rooted within cultural contexts, it is necessary to investigate values from a cultural perspective. In addition, there is a need for social and institutional changes to promote values that facilitate environmentally and socially responsible behaviours. This goal calls for a long-term approach for public policy makers and educators in the USA and China.

### **Limitations and recommendations for future study**

Several limitations in the study provide opportunities for future research. First, generalization of the research findings is limited because of the use of a sample of current college students within a limited geographical location in the USA and China. Although the majority of young Millennials are in college, caution should be used in generalizing the findings of this study to the young Millennial population as a whole. The sample is also biased in that it reflects a more highly educated portion of the young Millennial population. Less-educated young Millennial consumers' thoughts may not be represented here. Future research may use a random sample that is more heterogeneous in terms of geographic location and educational level to confirm the findings. Second, this study surveyed younger Millennials; however, future research should be conducted with older Millennials and to identify the differences between younger and older Millennials. Moreover, future research could include other generational cohorts to understand the different cohorts' sustainable apparel consumption behaviours.

Third, this study examined US and Chinese young consumers' sustainable clothing consumer behaviours. A natural next step based on the current study could be including other countries (such as India, Bangladesh and Thailand) to investigate how young consumers in other countries perceive sustainable clothing. As population growth and economic development are dramatically driving consumption in India (World Business Council for Sustainable Development, 2008), sustainable consumption and production in India is emerging as a key issue there. Bangladesh has been a top manufacturer of textile and apparel products in recent years (International Trade Administration – US Department of Commerce, 2019); however, the country is at the same time experiencing serious environmental deterioration. Sustainable products and sustainable consumption behaviour will be a future focus for Bangladesh. For Thailand, a sustainability

mindset has long taken root in the country (United Nations Department of Economic and Social Affairs, 2017). We hope to investigate sustainable consumer behaviour in more countries. Finally, there is a need to investigate the role of Hofstede's cultural dimensions and other cultural contexts (e.g. ethnicity and where people live) in impacting consumer attitude and behaviour towards sustainable products.

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