# **Social Media and Chinese Consumers’** **Environmentally Sustainable Apparel Purchase Intentions**

Keywords: social media, Chinese consumers, sustainability, apparel, influence of peers

**Abstract**

**Purpose:** Social media and sustainability are changing Chinese consumers’ consumption behavior in notable ways. Few apparel industry sustainability efforts are enforced or well known in China. As China operates its own social media sites, it is necessary to study Chinese social media, rather than Western types, in order to understand its influence on Chinese consumer behavior with regard to sustainability. By extending the theory of reasoned action and the prototype-willingness model, this study investigated how Chinese consumers were taught their environmentally sustainable apparel consumption behavior through social media, and also how the influence of peers affected their purchase intentions.

**Method:** A total of 238 survey responses were collected from a Chinese research firm in 2016 and analyzed. In accord with the study objectives, an exploratory factor analysis was first conducted, and then a two-step analysis of a structural equation model was employed for hypothesis testing. To test the significance of hypothesized mediated effects, a bootstrap procedure with 2,000 bootstrap samples from the original data was used to compute bias-corrected 95 percent CI for indirect effects. Moreover, hierarchical regressions were demonstrated to verify the unique contribution of social media influence.

**Findings:** The study findings support previous literature that indicated positive attitudes toward environmentally sustainable purchasing behavior increased as Chinese consumers learned about social and environmental issues. Also, results of the analysis revealed that Chinese consumers’ engagement with social media and their peers were important social influences that were directly tied to increasing sustainable apparel purchase intentions.

**Implications:** By extending two grand theories of the prototype-willingness model theory and the theory of reasoned action, this study underlines a novel link between the influence of social media and environmentally sustainable apparel (ESA) purchase intentions among Chinese consumers. Results are valuable in a global context as it is one of only a few studies to explore Chinese consumers’ purchase intentions of ESA through an exclusive social media platform—WeChat—in China.

**Introduction**

As global apparel companies strive to implement strategies to be more environmentally friendly and socially responsible, many fashion brands have begun to actively communicate information regarding the product development procedures of environmentally sustainable apparel, and the specific ways they reduce the use of harmful chemicals in apparel production (Reiter and Kozar, 2016; Song, 2017). China is the largest consumer market for the apparel industry with a population of 1.4 billion and rapid economic growth. Clothing expenditures there are projected to reach $2.2 trillion by 2020 (Thompson, 2014). Currently there is no organized means to educate consumers on sustainability efforts in the Chinese apparel industry (Reiter and Kozar, 2016). Consumption patterns among Chinese consumers have been shown to be based solely on fulfilling self-interest and concerns and not because of outside social or environmental issues (Rapp, 2016). This brings up a fundamental question as to how Chinese consumers can improve or change their purchase intentions toward ESA, which is defined as apparel that is “produced and consumed through processes in which resources are not depleted or permanently damaged” (Kang et al., 2013, p. 443).

Currently, social media is the one of most powerful consumer marketing tools available and is ubiquitously interwoven into consumers’ everyday lives, changing how consumers and marketers communicate with one another (Hennig-Thurau et al., 2004; Ismail, 2017; Nambisan and Baron, 2007). Numerous brands and retailers have adopted this trend with “40% of e-retailers maintaining a social network page and 59% of top retailers having a ‘fan page’ on Facebook” in 2011 (Pookulangara and Koesler, 2011). This has led many companies to utilize social media for marketing and advertising, as well as customer engagement, service, and idea innovation. The number of companies involved in these areas has nearly doubled from 42 percent in 2008 to 88 percent in 2012 (Smithet al., 2012). China’s fashion industry, the world’s largest consumer market, has employed social media to unlock new opportunities and engage more consumers within the country (Goldfarb, 2014). Social media usage in daily life for Chinese consumers plays a significant role in influencing consumption behavior, as well as in learning important knowledge points regarding sustainability from others (peers). In contrast to Western countries with Twitter, Facebook, and Instagram, WeChat is the most popular social media platform in China, offering a number of functions enabling users to shop for things from stickers and games all the way to groceries (Chiu et al.,2012).

As Chinese consumers become more interested in responsible products and more educated regarding brands and quality, ESA consumption in China attracts much attention worldwide from both policymakers and scholars (Yen et al., 2017; Zipser et al., 2016; Zhao et al., 2014). Previous literature on environmentally sustainable textile and apparel consumption has investigated the influences on the purchasing of ESA products, such as consumer knowledge, perceived consumer effectiveness, and perceived personal relevance among U.S. consumers (Kang et al., 2013). Accordingly, Zhao et al. (2014) argued that consumer awareness of environmental knowledge and associated contextual factors could determine green buying behavior among consumers in China.

Previous researchers have also investigated peer communication through social media websites among Chinese consumers and found the strength of individual-level ties and group-level identification with peer groups significantly impact product attitudes and purchasing decisions (Wang et al., 2012). Social media plays an important role in educating and reaching users regarding environmental and sustainability practices among young consumers (Andersson and Öhman, 2017; Ardoin et al., 2013). Previous studies in Western countries have confirmed that young consumers are highly engaged in communicating environmental and sustainability issues via social media (Andersson and Öhman, 2017). In this light, social media could become an influential channel for ESA information delivery and exchange, which could ultimately be influential with Chinese consumers’ purchase intentions toward ESA. Thus, it is vital to investigate the impact of social media, especially WeChat, on potentially increasing consumers’ concerns regarding ESA products and influencing their purchase intentions toward ESA, specifically based on the unique cultural context, features of WeChat, and the behavior of Chinese consumers.

As social media has notably changed Chinese consumers’ consumption behavior, understanding the influence of peer communication pertaining to ESA through social media is highly important (Trusov et al., 2010). Therefore, by tailoring research on ESA consumption behaviors and the impact of the social media platform WeChat, this study aims to (1) explain the role of social media on ESA purchase intentions by combining the theory of reasoned action and the prototype-willingness model; and, (2) empirically test the unique contribution of the influence of social media use on ESA purchase intentions by utilizing hierarchical regression and a structural equation modeling approach. The results of this research can not only provide managerial insights for the Chinese apparel industry but also contribute theoretical background in a new perspective to understanding the relationship of social media and ESA purchase intentions.

## **Literature Review**

### *WeChat and Environmentally Sustainable Apparel*

Social media plays an important role in interpersonal communication and has greatly changed the daily life of Chinese consumers (CIW Team, 2016). As Facebook is banned in China, national social networking sites such as WeChat, QQ, and Weibo have been attracting Chinese users at a fast pace. Since 2014, the number of social network users in China has increased by more than 100 million, and it is predicted to reach nearly 580 million users in 2018 (Statista.com, 2017). WeChat is the most influential social media site in China, with monthly active users reaching up to [938 million in Q1 2017](https://www.chinainternetwatch.com/20667/tencent-q1-2017/) and a 28 percent growth rate (Statista.com, 2017). WeChat has created a “new way to connect” and introduced “a way of life” by offering different functions such as WeChat pay, Order Taxi, Mobile Top Up, and WeChat circle (Gong et al., 2018; Lien and Cao, 2014).

Additionally, WeChat has driven spending on information consumption to 174.3 billion yuan (US$25.3 billion) in 2016, an increase of 26.2 percent from previous years (CIW Team, 2016). McKinsey iConsumer China 2016 reports that 31 percent of WeChat users initiated purchases on the platform from retailers’ official channels (brands’ public accounts) to user-generated content (such as friend circle and chat groups) using links to other apps (Wang et al., 2016). This increase in spending provides expanding opportunities for fashion-related brands and retailers to reach customers via WeChat through tactics like contextual targeting to display information about products at exact moments when consumers are reading about them.

Likewise, numerous fashion retailers, such as Zara, YOOX, and Topshop, have adopted WeChat in order to expand their markets in China (“China’s fashion industry,” 2014). Two thirds of luxury fashion brands are engaging consumers via WeChat, which was previously used primarily by news and media entities (Mauron, 2017). As an early WeChat adopter, Gucci transitioned its subscription account into a new service account to better complement its basic content broadcasting activities. Accordingly, Kontsevaia and Berger (2016) pointed out that WeChat has been dominating Chinese commercial communications and is quickly evolving into a full-fledged mobile social platform, including features such as mobile advertisements. Thus, WeChat provides rapid but extensive way to reach out to consumers, shifting advertising strategies into sustainable methods of online advantage for many fashion brands in China (Gong et al., 2018).

Globally, apparel companies increasingly recognize the demand from consumers to be more environmentally friendly and socially responsible by changing traditional business practices and even implementing corporate social responsibility practices (Rahman et al., 2017; Song, 2017). In order to connect and provide better insights regarding ESA, many global brands are actively communicating ESA product development strategies and transparent information regarding business practices to consumers (Reiter and Kozar, 2016). This has resulted in more studies looking to investigate green consumption in China (Chan, 2001; Diamantopoulos et al.,2003).

### *Theory of Reasoned Action*

The Theory of Reasoned Action was used as the theoretical framework in this study. Developed by Fishbein and Ajzen (1975), the Theory of Reasoned Action (TRA) strives to understand how people consciously take actions and analyze the consequences to those actions before they decide to partake in a certain behavior by linking attitude, subjective norms (akin to perceived social pressure), behavioral intentions, and actual behavior in a fixed-cause sequence. Attitude is defined as “a learned predisposition to behave in a consistently favorable or unfavorable manner with respect to a given object” (p. 228, Fishbein and Ajzen, 1975). According to the TRA (Fishbein and Ajzen, 1975), a positive attitude toward a given behavior indicates that an individual is more likely to participate in the behavior. Subjective norm refers to “behavior instigated by one’s desire to act as important referent others (e.g., friends, family, or society in general) think one should act, or as these others actually act” (Pookulangara and Koesler, 2011, p. 350). TRA’s central tenet emphasizes an individual’s intention to engage in a given behavior (Sheppard et al*.*, 1988).

Previous studies have fruitfully employed TRA to explore antecedents of coupon usage, shopping channel choice, using social media applications, and consumer purchase intention in many other contexts (Shimp and Kavas, 1984; Valentini et al*.*, 2011; Wang and Chou, 2016). Wang and Chou (2016) found that injunctive norms, descriptive norms, and social identity were positively related to continued usage intention of mobile social networking applications by adapting TRA. Zhang and Ip (2015) examined the relation between customers’ trust in social network sites (SNSs), customers’ trust in advertising information posted on the sites, and customers’ purchase intention by applying TRA. In terms of sustainable consumption, even though limited studies focused on apparel products, there were many studies that investigated other industries such as the food industry, green information technology, and so on. Vermeir and Verbeke (2006) investigated the gap between favorable attitude towards sustainable behavior and behavioral intention to purchase sustainable food products. Their study shows that more sustainable and ethical food consumption can be stimulated through raising involvement, perceived consumer effectiveness, certainty, social norms, and perceived availability. Researchers have also studied TRA and purchase intention within diverse cultural backgrounds (Lada et al*.*, 2009; Bagozzi et al*.*, 2000). Bagozzi et al*.* (2000) investigated the usefulness of TRA for fast food restaurant patronage decisions. In their study, four samples were drawn from the United States, Italy, China, and Japan. The findings exhibited that predictions under the theory of reasoned action were found to vary, depending on the social setting (eating alone or eating with friends) and cultural orientation (independent vs. interdependent). In addition, more explained variance occurred for Western cultures (American, Italian) than for Eastern cultures (Chinese, Japanese). Similarly, Lada et al. (2009) tested the applicability of TRA in predicting the intention to choose halal products among Malaysian consumers and found cultural differences impacted consumers’ purchase intentions significantly.

### *The Prototype-Willingness Model*

The Prototype-Willingness Model was used as a supplementary theory to explain the effect of social media on Chinese consumers’ purchase intentions toward ESA. Based on expectancy-value models of behavior, the Prototype-Willingness Model was extended by including a heuristic, or social-reactive pathway (Todd et al., 2016). The prototype model relates to dual processing models that focus on the cognitions that mediate the effects of environmental factors (e.g., peer use, stress, context) on behavior (Gerrard et al., 2008). The principle of this theory posits that the prototype as images of a typical person who engages in a behavior may link to willingness to engage in behavior (Todd et al., 2016). Two assumptions of decision-making are suggested as a) the reasoned path similar to TRA, which involves more analytic processing, and b) the social reaction path that involves more heuristic processing. That is, some behavior can be intentional, but much of it is not; instead, it is a reaction to social situations (Reyna and Farley, 2006). This explains how social influences such as social media and peer influence can be viewed as a social-reaction path to behavior (Gibbons et al., 2010). Consequently, the prototype model would be particularly useful for examining both social influence (Gibbons et al., 2004) and media effects.

Previous studies have tested the application of the Prototype-Willingness Model in many contexts. Van Gool et al. (2015) examined older adolescents’ personal disclosure on social network sites by adopting the Prototype-Willingness Model. Based on their findings, attitude was the strongest predictor of intention to share personal information. Subjective norms of teachers did not influence adolescents’ intentions. Gibbons et al. (2010) examined racial differences in the effects of peer and media influence on adolescents' alcohol cognitions and consumption. Results indicated that both peer influence and media influence have significant relationships with alcohol consumption. Similarly, Miller et al. (2014) studied the relationship between exposure to alcohol-related content on Facebook and predictors of alcohol consumption among female emerging adults. Their research discovered predictors of alcohol-related attitudes and described the potential role of social networking sites such as Facebook in the formation of social norms and the modulation of drinking behavior. In addition, Ratliff et al. (2017) used the Prototype-Willingness Model to understand how attitudes toward the prototypical environmentalist relate to environmental behavior. Their study posited that positive implicit and explicit attitudes toward the prototypical environmentalist predict self-reported engagement in environmentally friendly behaviors. Their study also revealed that positive implicit and explicit prototype attitudes also predicted a greater likelihood of donating to an environmental charity.

The Prototype-Willingness Model has largely been used to measure addictive behaviors. One important contribution of this study is to extend the Prototype-Willingness Model applicability to environmental behavior by focusing on environmentally sustainable apparel consumption. In this study, social media use and perception and social influence of peers were used as two important components of the Prototype-Willingness Model.

## **Hypotheses Development**

*Subjective Norm, Attitude, and Purchase Intentions*

In TRA, subjective norm is integral to specifically dealing with the influence of the social environment on intentions and behavior, especially when used at the moment the behavior is occurring (Kallgren *et al*., 2000). Lu et al. (2009) found that subjective norm plays an important role in influencing behavioral intention in the context of Chinese users’ acceptance of instant messaging. More particularly, Mostafa (2009) points out that a positive relationship between subjective norms and purchase intention has been found in numerous studies in the context of sustainable apparel consumption. Kang et al. (2013) conducted research among young consumers in three countries including China. In their study, subjective norm was discovered to positively impact ESA purchase behavior.

Most importantly, Buenstorf and Cordes (2008) argued that sustainability strategies focused on environmentally friendly methods should be part of an initiative towards more social learning with a focus on the individual. In other words, consumer learning as a social movement may change the way consumers act in regard to their purchasing intentions and attitudes. In a study focused on the relationship between information exposure and eco-conscious apparel acquisition, Sonnenberg et al. (2014) discovered that consumers were not willing to acquire environmentally sustainable apparel based on their concern for the environment, but gave more consideration to both price and functionality attributes. If consumers believe that a product is relevant to them, it is more likely to be of interest to them. Similarly, Kang et al. (2013) stated that consumers who had “reflective views of themselves as environmentally responsible tended to show pro-environmental attitudes” (p. 444). A recent study by Ha-Brookshire and Norum (2011) found that attitude towards environment, age, and gender were all significant factors for consumers who agreed to pay more for sustainable products. Based on the TRA model, researchers have investigated the role of attitude on purchase intention (Ogle et al*.*, 2004; Cowan and Kinley, 2014). Ogle et al. (2004) found that consumer attitude toward the retail environment could influence purchase decisions. Cowan and Kinley (2014) support this view and emphasize that attitude is the strongest predictor for purchasing ESA. Social and sustainable constructs built around design were found to match consumer attitudes toward clothing attributes as well as individual values to create a sustainable ideal of one’s self (Niinimäki, 2010). Therefore, the research hypotheses are:

*H1:* Subjective norm positively affects Chinese consumers’ attitudes toward environmentally sustainable apparel (ESA) products.

*H2:* Subjective norm (a) and Chinese consumers’ attitude (b) positively affect consumers’ purchase intentions toward environmental sustainability apparel (ESA) products.

In addition, a study by Thorgerson and Olander (2003) found that individual values and how consumers prioritized those values were of utmost importance when purchasing sustainable apparel among Danish consumers. A study by Leary et al. (2014) supported the theory that sustainable apparel purchases are based on consumers’ values and ethics. Huang and Rust (2011) and Sheth et al. (2010) posited that societal consumption patterns must incorporate sustainable intentions, which may help consumers to not only show concern about their own interests but to consider society as a whole. Paul et al. (2015) concluded that subjective norm was indirectly related to purchase intention toward green products among Indian consumers through attitude. However, little research has explored the mediation role of attitude among Chinese consumers, especially regarding ESA consumption. Therefore, the research hypothesis is:

*H3:* Attitude mediates the relationship between subjective norm and Chinese consumers’ purchase intentions toward environmentally sustainable apparel (ESA) products.

*Social Media Use and Perception*

Social Networking Sites (SNS) are “virtual places that cater to a specific population in which people of similar interest gather to communicate, share, and discuss ideas” (Raacke and Bonds-Raacke, 2008, p. 169). Kaplan and Haenlein (2010) stated that SNS could “go beyond the traditional realm by satisfying much more hedonic needs: the need for approval from peers, the desire for self-expression, and the desire for entertainment” (p. 351). In this regard, they emphasized that the influence of SNS could play a role as significant global cultural impacts and become the main source of information for many consumers, which could reframe consumer decision processes as well (Kaplan and Haenlein, 2010). As a result, social media has become an important way to connect with peers and extend networks of friends, which in turn facilitates communication particularly among peer groups (Zhang and Daugherty, 2009). Unconventional channels of social media did not only change the ways in which people socialize with peer groups, but also ultimately changed consumer behavior (Muratore, 2008; Shintaro, 2009). Social media’s exponential growth, though, means companies are no longer in control of the relationship, but customers and their highly influential virtual networks are now driving the conversation, which affects a company’s marketing, sales, and service efforts (Baird and Parasnis, 2010). By allowing individual consumers to create a public forum and easily access product information (Kozinet et al., 2010), social media has changed the consumer decision-making process and communications between consumer and retailer (Hennig-Thurau et al., 2011; Venkatesh and Malthouse 2007). More importantly, peer communication through social media has significant influence on consumers’ decision-making processes (Shintaro, 2009).

Particularly, social media’s influences on Chinese consumers are far greater and indispensable than they are on any other countries’ consumers (Chiu et al., 2012). Chiu et al. (2012) found that Chinese consumers are inclined to purchase products with evidences of positivity via social media, especially if their friends on social media highly recommend and comment about it. That is, due to cultural influences, Chinese consumers highly value relationships and social acceptance, and are more inclined to consider peer-to-peer recommendations. Compared to Western countries, the collectivism embedded in Asian culture plays a part in how the influence of peers is much stronger than in more individualistic societies. This is a perfect breeding ground for social media, such as WeChat, to be more influential in collectivist societies (Hofstede, 1984). Therefore, it is hypothesized as follows:

*H4:* Social media use and perception positively affect social influence of peers to use social media among Chinese consumers.

*Social Influence of Peers*

Though most businesses believe social media will increase advocacy, only 38% of consumers agree, and more than 60% of consumers believe that positive attitudes toward a business or brand is a prerequisite for social media engagement (Baird and Parasnis, 2011). Baird and Parasnis (2011) found that consumers are highly engaged to obtain retailer/brand information, which links directly to the purchasing process decision. Moreover, the authors addressed the fact that more than half of consumers do not even consider engaging with businesses via social sites, but rather these consumers perceive that social media and social networking are about personal connections with friends and family (Baird and Parasnis, 2011). This implies that consumers are using social media to gain recommendations, reviews, and opinions from friends, family, experts, and the collective social community (Gao and Bai, 2013). On the other hand, to develop attitude and perception about sensitive social and environmental issues, social media users may be highly influenced by their close peers or friends (Baird and Parasnis, 2011).

Studies from Goldstein et al. (2008) and Nolan et al. (2008) found that social pressure could encourage engagement in sustainable behaviors when conditions are uncertain and consumers feel more attentive to their peers and what they are saying, and when their direct peer groups are engaged in a certain behavior. A recent study by Liu, Zhang, and Li (2013) found that social behavior of generating and spreading information will influence the decision-making process. Accordingly, Hogg and Reid (2006) posited that social identity processes influence how people perceive and evaluate media—third-person perceptions and pluralistic ignorance. Recently, Zhang and Ip (2015) examined the relationship between customers’ trust in SNS, customers’ trust in advertising information posted on the sites, and customers’ purchase intentions by applying the TRA as a research framework. Although peers are widely acknowledged as critical forces affecting consumer socialization and attitude, influence of peers via social media for Chinese consumers has received limited research attention (Wang et al., 2012b). Therefore, it is hypothesized that:

*H5:* Social influence of peers positively affects (a) subjective norm and (b) attitude toward environmentally sustainable apparel.

Grounded in TRA and the Prototype-Willingness Model, this study suggests links between social media use and perception, social influences, subjective norms, attitude, and purchase intention. The methodology described in the next section allows us to investigate underlying relationships among these variables. Figure 1 shows research framework and research process flow chart.

[Insert Figure 1]

**Method and Results**

*Sample and Data Analysis Procedure*

For the purposes of this research, the data was collected via online survey in August 2016. Purposive sampling technique was used due to lack of an adequate sampling frame and was more useful for studying a small subset of a larger population through which it may be easier to make generalizations about the study sample (Jupp, 2006). Purposive sampling is more realistic in terms of time, effort, and cost in finding informants (Snedecor, 1939). Even though non-probability methods such as purposive sampling may lead to bias, data collected from purposive sampling can still prove reliable and robust (Tongco, 2007). To ensure the informant’s reliability, participants were recruited from the panel pool of “So Jump”—a professional survey company in China. All participants considered themselves to be active users of social media. The process was strictly controlled for participant selection and for total completion time to ensure quality of data. The questionnaire was originally developed in English, then it was translated into Chinese by one bilingual scholar who has a PhD degree in apparel merchandising, and then back-translated to English. During the translation process, another bilingual scholar was involved to ensure accuracy. A total of 236 usable responses were collected and used in the main analysis.

Measurement items were placed on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Comparing to a 5-point scale, a 7-point Likert scale has more adjacent options, which are more gradually different. This step-by-step spectrum of choices offers more independence to a participant to pick the “exact” one rather than to pick some “close” option. This further can result in better validity and reliability, which are driven by the applicability of the topic concerned (Joshi et al., 2015). Considering the objectives of this study, the 7-point Likert scale is most appropriate for participants to understand questions with less confusion.

Eleven items on the social media use and perception instrument (SMUP) were adopted from Wang et al. (2012) to measure consumers’ perceptions about social media (Cronbach α =.94). This scale has only been used in the original study, which examined consumers’ learning of continuing medical education. The items were altered to incorporate social media as it related to retail and apparel shopping. For example, the original item, “I would use social media to gain continuing medical education knowledge” was modified as “I use WeChat to gain knowledge.” To understand social influence of peers to use SNS (SI), four items (Cronbach α = .62) were adopted from Venkatesh et al. (2003). Five items to measure subjective norm (Cronbach α = .70) were adopted from Perrachio and Meyers-Levy (1994; 1997), and Luna and Peracchio (2001). Eight items regarding ESA attitude (Cronbach α = .85) were adopted from Perrachio and Meyers-Levy (1994; 1997) and Luna and Peracchio (2001), and items were modified to measure attitude regarding sustainable apparel. Lastly, two items of the ESA purchase intention scale (Cronbach α = .96) were adopted from Hyllegard et al.(2012). In addition, demographic information was collected, i.e., gender, age, annual income, and educational background, to assist in providing further contextual descriptions of consumers in China.

The adopted scales were first modified, translated and used in the context of ESA purchase intention among Chinese consumers. To ensure the item reliability, content validity was evaluated by experts in this field (textile and apparel professors, and Ph.D. students not familiar with this research but who are active social media users). Items were evaluated for clarity and conciseness. Then, exploratory factor analysis (EFA) was performed using principal axis factoring (PAF) and oblique rotation to test loading amplitude on the pattern matrix in SPSS 24.0 to find factorability of each construct in this study.

Subsequently, Amos 24.0 was used to perform statistical analysis and a two-step approach was adopted (Anderson and Gerbing, 1988). Confirmatory factor analysis (CFA) was first conducted to find a better model for the measurement of each latent variable (Jackson *et al*., 2009). Then, structural equation modeling (SEM) was employed to test the proposed hypotheses (H1, H2, H4, and H5). Hypothesis testing involved assessing the goodness of fit of the hypothesized model and investigating the significance and direction of the parameter coefficients to conduct tests of the hypotheses. In addition, hypothesized mediated effects (H3) were investigated by employing a bootstrap procedure with 2,000 bootstrap samples. Lastly, a three-stage hierarchical multiple regression was conducted to exhibit and confirm the unique contribution of the prototype-willingness model in elaborating social media influence on ESA purchase intentions among Chinese consumers. The detailed data analysis results are described in the following section.

### *Demographics*

All responses were carefully reviewed to ensure they matched the study’s target sample profile. Participants in this study were considered young with a majority being 18 to 35 years of age (78 percent). Among the final sample (N=236), 42.4 percent were males and 57.6 percent were females. Participants with a college degree comprised 71 percent of the sample, while 9.3 percent reported having a Master’s/MBA or higher degree. Regarding annual household income, 36 percent of participants reported an annual income of more than CNY200,000; 25.8 percent and 36.9 percent of participants had annual income between CNY100,000-CNY 199,999 and less than CNY 99,999 respectively. Sample characteristics are summarized in Table 1.

[Insert Table 1]

### *Exploratory Factor Analysis and Measurement Model*

### Reliability and validity were both examined in this study. For data analysis, only active WeChat users were selected. No missing values were observed, and normal distributions for all indicators of latent factors were found. Mild kurtosis values ranged from benign to 2.2 for the indicators of attitude (sustainable apparel is boring), social influence of peers on SNS use (in general, my peers support the use of WeChat), social media use and perception (WeChat is useful for learning about friends). While this does violate strict rules of normality, it is within more relaxed rules suggested by Sposito et al. (1983), who recommended 3.3 as the upper threshold for normality. Four items were removed due to low loadings and as indicated by reliability analysis.

### An exploratory factor analysis (EFA) with principal axis factoring and oblique rotation was performed. The Kaiser-Meyer-Olkin measure of sampling adequacy (KMO) value was 0.928 with a significant chi-square value for the Bartlett test for sphericity (χ 2 = 4266.846; p < 0.001), indicating that sufficient correlations exist among the variables (Hair, Jr. et al., 1998). The exploratory factor analysis was appropriate for the data. Multiple items demonstrated to have cross-loading issues and failed to exhibit a simple factor structure. These items were removed from the analysis. Then, loading amplitudes on the pattern matrix were all above .50 showing good convergent validity, and no major cross-loading correlations were found. The final structure included 23 items, which reflected a five-factor solution, and accounted for 66.59 percent of the total variance (Table 2).

### [Insert Table 2]

Following with the analysis, all latent variables were included in one single multifactorial CFA model. The minimum of 5 to 10 cases per parameter estimated for SEM suggests 230 to 460 cases for the present model, and the study sample size of 236 fell within that range (Bentler and Chou, 1987; Kline, 1998). The maximum-likelihood estimator was used, and the goodness-of-fit of the model was evaluated using the chi-square test statistic, the comparative fit index (CFI), the Tucker-Lewis index (TLI), the root mean square error of approximation (RMSEA), and the standardized root mean square residual (SRMR). Values larger than 0.90 for CFI and TLI, and 0.08 or lower for RMSEA or SRMR indicate good model fit (Hu and Bentler, 1999).

Three items were removed by accessing modification indices to improve the model fit. After running the diagnostics and eliminating the problematic items, the ensuing five factors including twenty items yielded a good fit. All Cronbach’s alpha reports were above .70, showing good reliability. Convergent validity was evaluated by AVE above .50 and discriminant validity was observed as the square root of AVE was greater than correlations (Table 3). Harman’s single factor was conducted to test the risk of having common method bias (Chang et al., 2010). The results indicated that more than one general factor accounted for the majority of the covariance between the measures. In addition, by observing the chi-square difference test between a zero-constrained and unconstrained model, non-significant method bias in the measurement model was identified as well. The result of the confirmatory factor analysis of the measurement model, including five latent constructs with a total of 20 items, exhibited a good model fit (χ2 =431.27, p<.000, χ2/df =1.67; RMSEA=.05; CFI=.96; TLI=.95; SRMR=.04) (Kline, 1998; Hu and Bentler, 1999).

[Insert Table 3]

[Insert Table 4]

### *Hypotheses Testing*

The statistic results revealed an acceptable model fit (χ2=316.95, p<.000, χ2/df =1.93; RMSEA=.06; CFI=.96; TLI=.95; SRMR=.05). It was found that subjective norm positively affected attitude (β = .68\*\*\*), thus H1 was supported by the results. Chinese consumers’ attitude toward environmentally sustainable apparel products was found to positively influence Chinese consumers’ purchase intentions. Therefore, H2b was supported. However, non-significant relationships were exhibited between subjective norm and Chinese consumers’ purchase intentions toward ESA. Hence, H2a was not supported and required further investigation as mediated effects showing below. In addition, social media use and perception positively impacted perception of social influence of peers to use social media (β = .64\*\*\*). Therefore, H4 was supported. The results exhibited significantly positive relationships between social influence of peers to use social media and subjective norms (β = .45\*\*\*), and social influence of peers to use social media and attitude toward ESA (β = .16\*\*\*). Thus, the results supported H4a and H5b, which were expected and aligned with previous literature. Figure 2 shows research model, parameter estimates, t-values, and significance levels.

[Insert Figure 2]

To test the significance of hypothesized mediated effects, a bootstrap procedure with 2,000 bootstrap samples from the original data was used to compute bias-corrected 95 percent CI for indirect effects; if the 95 percent CI does not include zero, then the indirect link is significant, p < .05 (Mallinckrodt *et al*, 2006). The indirect relation of subjective norms with purchase behavior through the mediating role of attitude was significant (95 percent CI [.280, .518], β = .378). Therefore, H3 was supported. For H3, the direct link was small and insignificant.

### *Hierarchical Regression*

To verify the unique contribution of social media influence to ESA purchase intentions among Chinese consumers, a three-stage hierarchical multiple regression was conducted with purchase intention as the dependent variable. Subjective norm and attitude were entered in the first step. By adding social influence of peers to use social media, three variables were entered in the second step. After that, social media use and perception was added in the third step. The change in R2 is a way to evaluate how much predictive power was added to the model by the addition of social influence of peers to use, and social media use and perception in steps 2 and 3. Results showed the 13% and 8% of variability accounted for went up from 30.6% to 51.5%, which was a significant increase. Both models including TRA and the prototype-willingness model predicted scores of the purchase intention of ESA to a statistically significant degree. Therefore, Chinese consumers’ social influences affect more strongly on Theory of Reasoned Action regarding environmentally sustainable apparel than without social influence. Table 5 shows hierarchical regression analysis for variables predicting purchase intention on ESA.

[Insert Table 5]

## **Discussion and Conclusions**

Consumers are becoming more interested in environmental and social responsibility, and apparel companies are responding to those demands by changing traditional business practices, becoming more transparent, and offering environmentally sustainable and socially responsible apparel (Song, 2017). However, consumers’ interest and knowledge toward apparel sustainability has not immediately resulted in sustainable apparel consumption behavior. To engage consumers in environmentally sustainable apparel purchases, our research adopted TRA and examined two assumptions of the prototype-willingness model as cognitive and social reaction to behavior. Through conducting a survey using Chinese consumers as the sampling framework, our study findings revealed that as Chinese consumers learn about social and environmental issues, there is a subjective norm link to positive attitude toward, and possible ultimate purchasing behavior of, ESA. More importantly, Chinese consumers’ engagement with social media and influence of peers via social media acted as important social influences that were tied directly to increasing ESA purchase intention.

The results showed that positive attitude is associated with higher levels of purchase intention toward ESA, supporting TRA. However, subjective norm was found to be not directly connected, but did indirectly impact Chinese consumers’ purchase intentions toward ESA through attitude. This result provides a novel finding for TRA adoption among Chinese ESA consumers and retailers. It is consistent with Paul et al. (2015) in their study about green consumption among Indian consumers. One possible explanation for the non-significant relationship between subjective norm and Chinese consumers’ purchase intentions toward ESA might be that China has a strong collectivist culture that encourages consumers to follow the same social norms or rules as their peers. Chinese consumers might be willing to buy ESA products if their friends, family members, colleagues, or people around them have prior experience purchasing ESA products. In addition, the empirical findings emanating from this study supported H4 and H5. Social media use and perception have a positive impact on the social influence of peers to use social media and, in turn, impacts subjective norm and attitude, supporting the prototype-willingness model. As mentioned in the literature review, Chinese consumers often gain recommendations, reviews, and opinions through their friends or peers on social media. The exposure of ESA on social media could influence consumers’ attitudes toward ESA leading to purchase intention. More importantly, the results of the hierarchical regression highlighted the unique contribution of adding social media influence within the TRA model. Social media, especially WeChat, is an important factor impacting consumers’ purchase intentions toward ESA in China.

*Theoretical Contributions and Implications*

This study is one of the few studies that has simultaneously investigated the prototype-willingness model theory and the Theory of Reasoned Action. Given that previous studies solely researched either the prototype-willingness model or the TRA, this study was able to build the link between social influence of social media and ESA purchase intention. Based on TRA, this study revealed that Chinese consumers develop their subjective norm of environmentally sustainable apparel, which then links to attitude and is further displayed through positive purchase intention. This implies that the TRA model of ESA is supported among Chinese consumers. This research explains that purchase decisions of ESA among Chinese consumers can be intentional and reasoned behavior. Particularly, the mediated effect of attitude was found between subjective norm and purchase intention among Chinese consumers. Unlike the direct link in the previous literature among other cultures, this finding offers the new insight into how subjective norm could impact the purchase intention toward ESA specifically in China.

More interestingly, drawing from the prototype-willingness model, Chinese consumers can develop their subjective norm of ESA via social media. Its findings showed that subjective norm can have more significant influence through social media, particularly via WeChat. Despite Facebook and Twitter being banned in China, local social networking sites such as WeChat have been attracting numerous users, and WeChat ultimately has changed the way to connect and influence consumers’ way of life in China through offering multiple functions such as paying, buying, connecting, socializing, and learning through WeChat. These additional functions exhibited through Chinese social media should be explored more thoroughly. While social ties reflect China’s strong cultural values, peers’ opinions and recommendations through WeChat are far more powerful regarding environmentally sustainable products. This supports the idea that social influences of social media platforms and influence of peers via WeChat are among the most critical ways to approach consumers in order to sway them towards more sustainable purchase intentions.

*Practical Contributions and Implications*

For apparel companies and policy makers, this study demonstrates that social media, especially WeChat, impacts Chinese consumers’ purchase intentions toward ESA. Apparel companies may wish to post relevant information on their official WeChat accounts about ESA to enhance consumers’ environmental knowledge and ESA apparel options. In addition, through unique events or promotions, apparel companies could encourage consumers to share the information in their friend circles or send to additional WeChat groups. For example, by collecting certain numbers of likes from WeChat friends, participating customers could enjoy a percentage discount. Through influence of peers, consumers take the initiative to accept the information about ESA. Moreover, government departments could consider having their official accounts on WeChat open up conversation opportunities with consumers. Currently, Chinese consumers mainly receive new policy information from television programs (Wang et al., 2014). However, as larger numbers of young consumers are prone to use social media for socializing and connecting with peers, social media can help to educate and reach out about environmental and social sustainability to young consumers, especially via WeChat (Andersson and Öhman, 2017; Ardoin et al., 2013). WeChat would be a great channel for the information exchange between government departments and consumers. As the apparel industry is closely related to consumers’ daily life, WeChat could be a convenient way for consumers to acquire ESA knowledge. Instead of one-way diffusion, interactions could help ESA information be more widely accepted and understood. The findings also suggest that apparel educators may incorporate social media marketing-related content into sustainability classes, as WeChat is becoming an important channel for consumers to know and understand ESA, as well as for retailers/brands to diffuse knowledge on the medium.

**Future Research and Limitations**

There are several limitations to this study that may lead to future research opportunities. First, our research focused on purchase intention of environmentally sustainable apparel among Chinese consumers. Results of this study may be valuable in a global context as it is one of the few to explore Chinese consumers’ purchase intentions of ESA as the China market’s buying power is exponentially growing. Therefore, future research can examine how Chinese consumers’ purchase intentions are truly linked to ESA consumption behavior. Moreover, a cross-culture study to explore other countries’ influences of social media on ESA purchasing decisions can be examined to better understand the differences between countries’ consumers. Not only do different countries have different values related to social media but also young generations are more socialized through social media. It may be an important step to understand social media’s influences on ESA and general purchase decision processes.

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