

5-2019

The Impact of Moral Philosophy and Moral Intensity on Purchase Behavior toward Sustainable Textile and Apparel Products

Heesook Hong

Ji Hye Kang

RESEARCH

Open Access



The impact of moral philosophy and moral intensity on purchase behavior toward sustainable textile and apparel products

Heesook Hong^{1*}  and Ji Hye Kang²

*Correspondence:

heesookh@jejunu.ac.kr

¹ Professor, Department of Fashion and Textiles, Jeju National University, Jeju, South Korea

Full list of author information is available at the end of the article

Abstract

This study investigated the causal–effect relationships among moral philosophy, moral intensity, and purchase behavior toward environmentally sustainable textile and apparel products. A research model incorporating two dimensions of moral philosophy (i.e., idealism and relativism), five dimensions of moral intensity (i.e., magnitude, probability, temporal immediacy, proximity, and social consensus), and purchase behavior toward sustainable textile and apparel products was tested using consumer data collected from a wide age range of Korean females through online surveys. Organic and naturally dyed textile and apparel products were selected as focal interests of this study due to the significance of the two product markets in Korea. The results revealed that, of the two dimensions of moral philosophy, only idealism had a significant impact on overall moral intensity and moral intensity had a significant impact on consumer purchase behavior toward sustainable textile and apparel products, which confirmed the sequential relationship among the variables. As the first attempt, to our knowledge, to apply an ethical view to environmentally sustainable textile and apparel product consumption, this research contributes to a deeper understanding of the determinants of sustainable textile and apparel consumption among Korean consumers and the development of effective marketing communication strategies targeting Korean consumers.

Keywords: Moral philosophy, Moral intensity, Purchase behavior, Sustainability, Organic products, Naturally dyed products

Introduction

Sustainable development is defined by the United Nations World Commission on Environment and Development (WCED) as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (WCED 1987, p. 43). Sustainability is a core value that allows businesses to thrive and grow while addressing three significant social issues: environmental protection, social development, and economic development (Oppenheim and Stuchtey 2015). Because sustainability is a holistic approach to development, business activities must address these three issues to attain sustainability. For example, under the sustainability approach, environmentally friendly products (environmental sustainability) need to be produced

by fairly treated workers (social sustainability) and must contribute to the economic health of the community in which firms and factories reside (economic sustainability).

Environmental sustainability, of these three issues, has received the most attention from the textile and apparel industry as the industry has been criticized for generating a huge environmental footprint at various stages of production and consumption, from the use of resources to the disposal of products at the end of product life cycles (Muthu 2014). In the context of an awareness of sustainability, the global environmental sustainable textile market was projected to grow to US\$74.7 billion by 2020, at a compound annual growth rate (CAGR) of 11.5% from 2015 to 2020 (Oh 2017). The global organic cotton market has emerged as the most representative and the fastest-growing market, with a growth rate of 39.5% from 2013 to 2014, reaching US\$15.7 billion in 2014 (Lee 2016). Within this global trend, the Korean environmentally sustainable textile and apparel market has also been expected to grow rapidly since the 2000s (Cho 2008; Jun 2014; 2018 fashion industry hot issue 2018); for example, the Korean natural dye market was projected to expand at a CAGR of 10% after 2010, when the market was worth approximately US\$30 million (Gyeongbuk Natural Color Industry Institute 2011). This expectation exceeds the projected growth of the global natural dye market that was a CAGR of almost 9% from 2015 to 2019 (Technavio 2015).

However, it is noticeable that overall, the Korean environmentally sustainable textile and apparel market has not, thus far, achieved as a significant level of growth as the global market has (Jun 2014; Oh 2017), even though leading Korean firms continue to introduce environmentally sustainable products and to apply sustainable components across apparel categories (Cho 2009; Oh 2017). A recent social issue in Korea, fear of chemicals caused by unethical products that contain harmful substances, such as humidifier disinfectants, sanitary pads, and bed mattresses, and accelerated nature- and health-oriented consumption (Consumer activists 2018; Fear of chemicals 2017), may generate greater demand for environmentally sustainable textile and apparel products in Korea.

Even though sustainable textile and apparel products have received a lot of attention in the consumer behavior literature, the existing literature is confined to three main aspects, overall. First, market-related variables, such as eco-labeling (Hyllegard et al. 2012), recycled fibers (Hines and Swinker 1996), product attributes (Ha-Brookshire and Norum 2011), and communication (Lee et al. 2012), as well as limited cognitive aspects, such as consumers' awareness, knowledge, attitudes, and motivation with regard to sustainability (Joergens 2006; Han and Chung 2014), have been the focus of research. As a result, investigations into the relationship of environmentally sustainable fashion consumerism to psychological factors have rarely been conducted. Second, the primary limitation of environmentally sustainable textile and apparel research is sampling; most existing studies rely heavily on data collected from young female consumers (Gam 2011; Hill and Lee 2012) or qualitative approaches using small samples (Ha-Brookshire and Hodges 2009; Hill and Lee 2012; Joergens 2006). Research including a variety of respondents would contribute to a more comprehensive understanding of environmentally sustainable fashion consumption. Third, research on Korean consumer behavior toward sustainable textile products is scant and mainly limited to providing descriptive information on Korean consumers' purchase items, perceptions, attitudes,

and satisfaction regarding environmentally sustainable products (e.g., Cho and Han 2015; Han and Chung 2014; Hong and Kim 2010; Hong and Koh 2009; Park 2011, 2015). This calls for research on various factors that shape consumer behavior in the Korean environmentally sustainable textile and apparel market.

To address the limitations of the existing literature, this study aimed to examine Korean consumers' environmentally sustainable textile and apparel consumption by employing two cognitive aspects of ethics (moral philosophy and moral intensity) as antecedents of environmentally sustainable textile and apparel consumption. Environmental decisions and actions involve not only personal concerns but also public concerns. For example, if a factory uses toxic chemicals for garment production and is not equipped to treat toxic substances, it may cause water contamination through the unethical management of chemicals, resulting in public and environmental health issues (Gross and Birnbaum 2017) as well as environmental issues. Thus, environmental behavior has often been researched by means of ethics-related variables, such as moral norms (e.g., Feinberg and Willer 2013; Van Liere and Dunlap, 1978). We included moral philosophy (i.e., an individual's value and belief regarding morality) and moral intensity (i.e., the extent of issue-related moral imperatives in an individual's perception toward a situation) as antecedents of environmentally sustainable behavior because they are widely-used as determinants to understand consumer ethical judgment and behavior (e.g., Singh et al. 2007; Singhapakdi et al. 1999).

Two textile and apparel products, organic and naturally dyed, were selected for this study. The organic market represents the global environmentally sustainable textile and apparel market, whereas the demand of the Korean organic market significantly underperformed (Lee 2016). The Korean naturally dyed textile and apparel market is a unique environmentally sustainable market associated with Korean traditional values and lifestyle, and the government, therefore, invests to support the market (Choi 2012). Hence, investigating these two markets is significant to understand Korean consumer characteristics regarding environmentally sustainable textile and apparel product consumption. The specific objectives of this study are to investigate (1) the effect of moral philosophy (idealism and relativism, respectively) on moral intensity toward organic and naturally dyed textile and apparel product purchases and (2) the effect of moral intensity on purchase behavior toward organic and naturally dyed textile and apparel products among Korean female consumers.

Literature review

Consumer behavior of the Korean organic and naturally dyed textile and apparel markets

Organic textile and apparel products are goods made with organic cotton, wool, or silk that are raised in nonchemical conditions or through organic livestock management (Organic Trade Association 2017; Ton 2007). Even though the leading textile and apparel firms in Korea have raised awareness of environmental issues in the market and encouraged Korean consumers to purchase organic products (Im 2017; Oh 2017), organic products have not become a mainstream trend in the Korean textile and apparel market. Studies on Korean consumer behavior toward the organic textile and apparel products are also limited.

The practical benefits that consumers recognize organic products as providing were found to be the most significant motivation to purchase them (Han and Chung 2014). Among 573 Korean college students, 38% reported health concerns as the reason for purchasing organic products of sanitary pads, bedding, underwear, shirts, and socks, whereas only 3.8% mentioned environmental concerns as a reason for purchases (Park et al. 2015). Consumer satisfaction is also attributed to practically beneficial qualities such as being skin-friendly, having an anti-atopic function, safety, and quality (Cho and Han 2015).

The consensus of the existing research, however, is that aesthetic aspects, financial risk, and credibility of material are the main reasons for dissatisfaction or discouragement resulting from purchases. Even though the usage of organic items has expanded from baby and skin-contacting items to outdoor, sports, casual, and women's wear (Cho 2009), the design elements of organic apparel, such as color and product design, did not satisfy Korean female consumers (Park 2011). Even for products made for infants, Korean young mothers with infants under 3 years old reported that design elements were the reason for their dissatisfaction with organic products, in addition to price and distrust of organic materials (Cho and Han 2015).

A few risks are more frequently associated with organic products. Financial risk and performance risks related to skin-friendly material and the durability of organic apparel products were found to be barriers to product purchase among Korean female consumers (Han and Chung 2014; Hong and Koh 2009). Hence, Korean female consumers who mainly purchased baby underwear, bedding, and body products such as diapers and wrappers for a baby's hands and feet demanded certification labeling to confirm that materials were genuine and safe (Cho and Han 2015).

Naturally dyed products include textile and apparel dyed with dyes derived from natural sources, such as plants, animals, and minerals (Samanta and Konar 2011). The Korean naturally dyed market is a unique market in which consumers are interested in nature and traditional culture and consider naturally dyed products to be a way to express their values, self-image, or lifestyle to others (Hong and Kim 2010; Kim and Hong 2010). The main products purchased by consumers in this market are scarfs, bedding, and apparel such as modernized traditional costume, children's wear, and women's wear (Hong and Kim 2010) dyed with ochre, persimmon juice, or indigo (Kim and Hong 2010).

The main customer group with positive attitudes toward and purchase experiences of Korean naturally dyed textile and apparel products is more likely to be married (69.3% of the group), and females over 40 years old (55.3% of the group) accounted for 30.9% of the 213 respondents (Kim and Hong 2010). The study also found that the largest consumer group (44.9% of the respondents; 58.1% in their 20s and 37.8% in their 30s; 48.1% married and 51.9% single) demonstrated positive attitudes toward the naturally dyed products but did not have purchase experience. High price and difficulty in washing and handling of the products were reported as the main barriers to purchase of the products. Consumers in their 20s (63.4% of the group) and single (55.8% of the group), who constituted 24.2% of the respondents, stated that aesthetics and trendiness were the main faults of naturally dyed textile and apparel products, leading to their negative attitudes toward and no purchase experience with such products.

Korean consumer behavior literature on organic and naturally dyed textile and apparel products provides basic knowledge and significant implications that businesses need to mitigate financial and performance risks perceived by consumers and improve the aesthetic aspects and credibility of the products. However, due to the scant research with limited topics, this area requires additional research with various topics and perspectives in order to obtain an in-depth understanding of Korean consumer behavior toward Korean organic and naturally dyed textile and apparel products.

Theoretical framework

The cognitive hierarchy model provides significant insight into the relationships among cognitions, in which influence theoretically flows from more abstract, general cognitions to mid-range, domain-specific cognitions to specific behaviors. Kahle (1980) theorized that there is a less abstract, more domain-specific intervening variable between abstract cognitions (e.g., personal values) and behaviors. Substantial research has demonstrated the hierarchical cognitive sequence in which attitude is a mid-range state. Homer and Kahle's (1988) study tested the model in the context of natural food shopping, and their results supported the finding that some specific values, such as fun and enjoyment, self-fulfillment, and self-respect (abstract cognition), were associated more strongly with attitudes toward the nutrition of natural food (domain-specific cognition) and then the attitudes influenced shopping behaviors regarding natural food (specific behavior), which, in turn, supported the mediating role of domain-specific cognition between abstract cognition and behavior. Based on this model, Hartman et al. (2006) used innovativeness as a mid-range cognition to investigate online consumption behavior and suggested that the cognitive hierarchy model should be applied to other types of consumption to answer a multitude of research questions.

Employing the cognitive hierarchy model, we developed a research model in which moral intensity moderates the relationship between moral philosophy and purchase intention (Figs. 1 and 2). Moral philosophy comprises personal beliefs and values of morality (Forsyth 1980), and it is an abstract, general, and fundamental cognition. Following Forsyth (1980), the two dimensions of moral philosophy, idealism and relativism, were included in this research as categories of moral philosophy, while moral intensity was considered a mid-range, domain-specific cognition because it represents an inquiry into a specific moral situation. Additionally, moral philosophy influences behavior only when an individual perceives that a moral issue is at stake, and the influence depends on situational involvement (Singhapakdi et al. 1999). Therefore, it was hypothesized that moral philosophy (i.e., idealism and relativism) would impact moral intensity, and then moral intensity would influence consumer purchase behavior.

Moral philosophy

Moral philosophy is "a set of principles that individuals set forth as the right way to behave" (Fraedrich and Ferrell 1992, p. 283) and provides guidelines for moral judgments and behavior in morally toned situations (Forsyth and Nye 1990). Forsyth (1980) defined it as a comprehensive cognitive system of morality that includes values and beliefs. He suggested that an individual's moral philosophy depends on his or her levels of idealism and relativism, which can be measured using the ethics

position questionnaire (EPQ) pertaining to idealism and relativism. Idealism is based on altruism (i.e., concern for others' welfare) and concerns for the consequences of moral issues among other people. Therefore, highly idealistic individuals believe that harming others should always be avoided when making decisions. In contrast, relativism refers to the belief that moral standards are relative and that there is no absolute standard by which to judge an issue morally. Therefore, highly relativistic individuals do not accept an absolute evaluation of an ethical issue.

Ethics research has confirmed that moral philosophy is strongly related to ethical judgment and behavior (Singh et al. 2007; Singhapakdi et al. 1999). However, since scant research on moral philosophy has been conducted on sustainable textile and apparel products, moral philosophy was employed in the current research to understand how an individual's philosophical beliefs are processed to form purchase behaviors toward environmentally sustainable textile and apparel products.

Moral philosophy, as a determinant of ethical judgment and behavior, may become a critical subject in the global textile and apparel industry. Regarding child labor in the textile and apparel industries of underdeveloped countries, many consumers might find such practices unacceptable. If children need to work to support their families and for survival, relativists, on the other hand, might think that working in a garment factory is better than more dangerous types of work, such as prostitution (Rudell 2006), while idealists might believe that child labor should be banned because it exploits children. As such, ethical decisions are complicated in the global textile and apparel industry, and idealism and relativism play critical roles in the ethical judgment of such issues in the industry.

Moral intensity

Moral intensity is defined as the extent of issue-related moral imperatives in an individual's perception toward a situation (Jones 1991). According to Jones (1991), moral intensity comprises six dimensions that determine the imperative an individual perceives; these include the magnitude of consequences (i.e., the total sum of the harm or benefit of the moral problem), the probability of effect (i.e., the likelihood that the moral problem will actually cause harm or benefits), temporal immediacy (i.e., the temporal distance from the present to the consequence of the moral problem), the concentration of effect (i.e., the degree of dispersion of the impact of a given magnitude of the moral problem in relation to the number of people), proximity (i.e., the closeness that an individual feels to the harm or benefits caused by the moral problem), and social consensus (i.e., the degree of social agreement that the moral problem is good or bad). In other words, people who believe a specific activity, such as separating garbage for collection and recycling, results in a significant social benefit (i.e., high positive perception of the magnitude of consequences) are more likely to consider the activity an important moral issue. Similarly, people who believe members in a society concur that an activity is seriously harmful to the society (i.e., high positive perception of social consensus) are also likely to consider the activity morally important.

Hypothesis development

Regarding moral philosophy, the researchers expected that idealism would have a positive effect on cognitive variables, such as moral intensity, ethical concern, and ethical judgment, whereas relativism would have a negative effect on variables related to marketing settings (Ha and Lennon 2006; Singhapakdi et al. 1999). Idealism implies holding absolute and universal views on moral issues, and idealists become more involved in moral issues than relativists, while relativism admits moral pluralism and influences moral intensity depending on a specific situation.

Existing literature (Ha and Lennon 2006; Singh et al. 2007) confirms the solid relationship between idealism and moral intensity; however, the findings regarding relativism tend to be mixed. Ha and Lennon's research (Ha and Lennon 2006) on counterfeit fashion products identified that students' idealism positively predicted ethical judgments regarding the purchasing of fashion counterfeit products, resulting in a negative relationship with purchase intention toward counterfeit products, whereas relativism did not have a significant impact on ethical judgments.

Singh et al. (2007) showed that, overall, idealism was a significant predictor of perceived moral intensity for both U.S. and Chinese managers with regard to four unethical market scenarios (e.g., a plant manager knows of hazardous waste from the production process of a new product but decides to ignore the problem). That is, managers with higher idealism are more likely to view the issue as an imperative moral issue. These findings suggest that both U.S. and Chinese managers perceived marketing scenarios as public ethical issues that could influence others' well-being; thus, idealistic concerns (e.g., no harmful consequences to others) were more associated with their perceptions of the issues.

However, among Chinese managers, relativism negatively influenced moral intensity. Chinese managers with high relativism were likely to view unethical issues as not imperative. Regarding bribery, only relativism influenced Chinese managers' moral intensity, suggesting that Chinese managers perceive bribery as not being an absolute wrong. Chinese traditional culture views bribery as a business practice that is part of *guanxi*, but global business standards apply pressure for this practice to change (Dunfee and Warren 2001). As such, Chinese managers consider bribery to be a moral issue depending on the situation and based on relativistic concerns.

A multi-country report surveying 1000 employees in each of 13 countries also supported the premise that ethical principles and practices in business vary across countries. In the United States, 16% of respondents, versus 21% in Korea and 27% in China, reported that they have offered or accepted bribes, kickbacks, and/or inappropriate gifts, demonstrating that both the Korean rate and the Chinese rate were higher than the U.S. rate, which equates to the median value (Ethics & Compliance Initiative [ECI] 2016). However, regarding misconduct such as a violation of the law and an organization's values or principles, 30% of employees in the U.S., 28% in Korea, and 34% in China reported that they observed those types of misconduct; in this case, the rates of the United States and Korea were lower than the median value of 33%. It is noticeable that ethical practices in a country also depend on specific situations. Auger et al. (2007) surveyed 600 middle-class respondents from six countries, including the United States and Korea, and confirmed some variations in the ranking order of social and ethical issues. The U.S.

respondents were likely to be concerned about (in decreasing order of concern) human rights, no child labor, and gender, racial, and religious rights, whereas Korean respondents were likely to be concerned about human rights, product disposability, and biodegradability (Auger et al. 2007), confirming that ethical concerns and practices depend on specific situations and cultures. Hence, we need to look into environmental concerns among Koreans for the purposes of this study.

In the past decade, environmental concerns in Korean society have greatly increased. A Korean government report on 1000 Koreans in 2016 found that 53.9% of respondents were interested in environmental issues, and 77.1% believed that environmental protection was an important social issue. Moreover, 56.5% of respondents reported that the Korean government's relevant regulations and benefits regarding environmental issues were the best solutions to these issues (Korean Environment Institute, 2016). These responses demonstrated that, overall, Korean consumers consider environmental issues to be important public and global issues, which is an idealistic rather than a relativistic view. The responses also reflected that Koreans assume that if they adopt the appropriate action, desirable consequences will result and bring about positive effects for society, which is also an idealistic perspective. Hence, idealism and relativism were expected to have different impacts on Korean consumers' moral intensity toward sustainable textile and apparel consumption. H1 and H2 are proposed as follows.

H1: Idealism has a positive impact on moral intensity toward organic (H1-a) and naturally dyed (H1-b) textile and apparel product purchases.

H2: Relativism has a negative impact on moral intensity toward organic (H2-a) and naturally dyed (H2-b) textile and apparel product purchases.

Little research has been conducted on moral intensity in sustainable consumerism. One study by Chih and Chen (2010) on laundry detergents included four moral intensity dimensions (i.e., the magnitude of consequence, social consensus, temporal immediacy, and proximity) and examined the relationship between these dimensions and consumers' purchase intentions toward an environmentally sustainable detergent and a non-environmentally sustainable detergent. Overall, the research confirmed the positive relationship between moral intensity and purchase intention toward the sustainable product and the negative relationship between moral intensity and purchase intention toward the unsustainable product.

Park (2005) revealed in her research on buying/sourcing professionals in the apparel and shoe industry that, in general, professionals who consider socially responsible business issues (e.g., human rights and fair employment in the production workplace) as more important to business tend to elaborate ethical business information in their professional work. In the sustainable textile and apparel field, a previous study suggested that the biggest hurdle to ethical consumption is consumers' low level of recognition of the (un)ethical consequences of their purchases (Bray et al. 2010). Hence, if consumers are aware of the consequences and influence of their purchasing of environmentally sustainable textile and apparel products and consider these to be important (i.e., high moral intensity toward sustainable products), their purchasing of sustainable products increases. Based on this rationale, the third hypothesis was developed.

H3: Moral intensity toward purchasing of organic textile and apparel products (H3-a) and naturally dyed textile and apparel products (H3-b) positively influence consumers' purchase behavior toward these products.

Methods

Data collection and respondent characteristics

Data were collected using an online survey targeting Korean female consumers who are known to be major consumers of organic fashion products (Park 2011) and naturally dyed fashion products (Lee and Ryou 2011) and are also more knowledgeable about environmentally sustainable fashion products than Korean males (Gong et al. 2014; Park 2011). To encourage target consumers to participate in the survey, it was announced on 60 websites, primarily online community sites and blogs that were registered on the most popular portal site in South Korea, and female consumers frequently used for networking and information gathering. People who were interested in the survey were directed to the first author's home page for this study by clicking a link provided in the announcement. Then, they responded to a self-administered questionnaire on the home page. A total of 321 responses were used for data analysis after excluding incomplete questionnaires and respondents who did not know of any organic or naturally dyed textile and apparel products. In addition, by calculating the Mahalanobis distance, outliers were excluded to improve the normality of the data. SPSS 12.0 and AMOS 18.0 were used for data analysis.

This study included a wide range of female age groups: 23.4% of respondents were in their twenties, 37.7% in their thirties, 29.6% in their forties, and 9.3% in their fifties. Among the 321 female respondents, 64.5% were married, 56.1% were employed, and 67.0% of respondents reported that their household monthly income was greater than \$3533, which is close to \$3573, the average Korean monthly household income in 2015 (Statistics Korea 2016). College graduates accounted for the largest portion of education (63.6%). Consumers living in 16 regions of Korea (seven cities and nine provinces) participated in this study, and about half were residents of Seoul (28.3%), the capital city, and Gyeonggi Province (21.8%). Table 1 presents the details for the respondents.

Measurements

The questionnaire consisted of five sections: moral philosophy, moral intensity toward organic textile and apparel product purchases, moral intensity toward naturally dyed textile and apparel product purchases, purchase behavior toward the two types of products, and demographics. *Moral philosophy* was measured using Forsyth's (1980) EPQ regarding idealism and relativism. Ten items for each dimension were used. An example statement for idealism was "One should never psychologically or physically harm another person," and one example for relativism was "What is ethical for everyone can never be resolved since what is moral or immoral is up to the individual." *Moral intensity* was measured in five dimensions (i.e., magnitude, probability, temporal immediacy, proximity, and social consensus), and three items for each dimension were developed based on previous studies (Park 2005; Singhapakdi et al. 1999) to fit environmentally sustainable textile and apparel product consumption. An example measurement for magnitude was "If I buy organic textile or apparel products (or naturally dyed textile or apparel

Table 1 Respondent characteristics (n = 321)

Characteristics	Categories	Frequency	Percent
Age (years)	20–29	75	23.4
	30–39	121	37.7
	40–49	95	29.6
	50–59	30	9.3
Marital status	Single	114	35.5
	Married	207	64.5
Occupation	Housewife/not employed	97	30.2
	Employed	180	56.1
	Students	29	9.0
	Others	15	4.7
Household monthly income (US\$) ^a	Less than 1767	13	4.0
	1767—less than 2650	30	9.4
	2650—less than 3533	63	19.6
	3533—less than 4417	54	16.8
	4417—less than 5300	75	23.4
	5300—less than 6183	30	9.3
	6183—less than 7067	23	7.2
	7067—less than 7950	9	2.8
Education (highest degree)	More than 7950	24	7.5
	Middle or elementary school	1	.3
	High school	44	13.7
	Currently college or graduate student	38	11.8
	College	204	63.6
	Graduate school	34	10.6
Area of residence	Capital city (Seoul)	91	28.3
	Gyeonggi province	70	21.8
	Jeju province	56	17.5
	Six big cities ^b	60	18.7
	Seven other provinces ^c	42	13.1
	Others	2	.6

^a Korean wons were converted using the average currency exchange rate in 2015 (US\$1 = KRW 1132.10)

^b The cities are Busan, Daegu, Gwangju, Incheon, Daejeon, and Ulsan

^c The provinces are Gangwon-do, Chungcheongbuk-do, Chungcheongnam-do, Jeollabuk-do, Jeollanam-do, Gyeongsangbuk-do, and Gyeongsangnam-do

products), it will greatly decrease environmental pollution,” and one for probability was “If I buy organic textile or apparel products (or naturally dyed textile or apparel products), it is very likely to positively influence environmental protection.” Concentration on the harm/benefit dimension was excluded because it was not relevant to the situation of buying organic or naturally dyed textile and apparel products. To measure *purchase behavior*, we adopted an integrated concept by including purchase intention and actual purchase in one construct to increase the accuracy of the estimate. It helps to compensate for the discrepancy between purchase intention and actual purchase and to avoid overestimation caused by only measuring purchase intention as well as underestimation caused by only measuring actual purchase (Newberry et al. 2003). Hence, purchase behavior toward organic and naturally dyed products was measured by two items,

the degree of willingness to buy and the frequency of actual purchase, respectively. All measurement items were measured using a 7-point Likert scale (1 = strongly disagree to 7 = strongly agree; 1 = never to 7 = very frequently).

Results

Consistent with the two-step approach advocated by earlier researchers, this study first evaluated the measurement model by conducting a confirmatory factor analysis (CFA). The structural equation model was then estimated for hypothesis testing. Both the measurement model and the structural model were assessed using the maximum likelihood method (Arbuckle 2003). Prior to data analysis, the normality of data distribution for all measurements was investigated. The skewness ranging between -1.211 and $.683$, and kurtosis ranging between -1.239 and 1.935 for all measurement items demonstrated a normal distribution of the data (Kline 2005), which confirmed that the data were applicable for analysis of structural equation modeling.

Measurement validation

Among the four main constructs of the measurement model, moral intensity was included as a second-order construct with five sub-constructs (i.e., magnitude, probability, temporal immediacy, proximity, and social consensus). A measurement model for each organic and naturally dyed product was tested separately because moral intensity is a situation-specific concept, and questions for moral intensity were asked about each specific product (see Figs. 1 and 2).

To refine the measurement model for organic products, the loading values of each main construct and sub-construct were assessed, and then measurement items with loading values of smaller than $.5$ were deleted; modification indices were considered while conducting the CFA for the pooled second-order measurement model. Four items from idealism and six items from relativism were removed, and one reverse item was deleted from each variable of probability and temporal immediacy, which are sub-constructs of moral intensity. The CFA on the final measurement model yielded the required levels of fit indices. The relative Chi square value ($\chi^2/df = 1.567$) was smaller than 2.0 , and fit indices (RMSEA = $.042$, CFI = $.956$, TLI = $.950$) were within acceptable levels. GFI and AGFI values were also acceptable (Table 2). The measurement model fit for organic products appears quite good.

The composite reliabilities (CR) and the average variance extracted (AVE) for each construct and sub-construct exceeded the acceptable level, although the values for relativism (AVE = $.484$), temporal immediacy (CR = $.677$), and proximity (AVE = $.492$) were at a marginal acceptance level, which was, in turn, close to the recommended values of $.7$ or $.5$ (Hair et al. 2010). The loading values of all items and sub-constructs of moral intensity were statistically significant. Thus, the CFA results confirmed the convergent validities of all variables included in the measurement model for organic products. In addition, all squared multiple correlation (SMC) values were lower than the AVE values, confirming discriminant validity for all scales (Table 3). Descriptive statistic information for the organic product measurement items is presented in Additional file 1: Appendices 1 and 2.

Table 2 The CFA results of the pooled second-order measurement model: organic and naturally dyed products

Variable	Item	Organic products			Naturally dyed products		
		Loading value	CR	AVE	Loading value	CR	AVE
Idealism	If an action could harm an innocent other, it should not be done	.808***	.862	.516	.812***	.862	.516
	One should never psychologically and physically harm another person	.777***			.777***		
	It is never necessary to sacrifice the welfare of others	.774***			.770***		
	One should not perform an action which might in any way threaten the dignity and welfare of another individual	.773***			.773***		
	Risks to another should never be tolerated, irrespective of how small the risks might be	.590***			.590***		
	The existence of potential harm to others is always wrong, irrespective of the benefits to be gained	.539***			.541***		
	Relativism	Moral standards are simply personal rules which indicate how a person should behave and are not to be applied in making judgments of others	.820***	.787	.484	.816***	.788
Moral standards should be seen as being individualistic; what one person considers to be moral may be judged to be immoral by another person		.698***			.701***		
Rigidly codifying an ethical position that prevents certain types of actions could stand in the way of better human relations and adjustment		.640***			.640***		
Different types of moralities cannot be compared as to "rightness"		.607***			.610***		
Moral intensity		Magnitude	.975***	.929	.731	.987***	.925
	Probability	.994***			.974***		
	Temporal immediacy	.813***			.854***		
	Proximity	.857***			.779***		
	Social consensus	.566***			.575***		
Magnitude	If I buy _____, it will greatly decrease environmental pollution	.821***	.772	.533	.790***	.851	.657
	it will greatly contribute to environmental protection	.741***			.795***		
	its positive impact on environmental protection will be great	.614***			.845***		

Table 2 (continued)

Variable	Item	Organic products			Naturally dyed products		
		Loading value	CR	AVE	Loading value	CR	AVE
Probability	If I buy _____, it is very likely to positively influence environmental protection	.810***	.781	.641	.872***	.862	.758
	it is very likely to decrease actual environmental pollution	.791***			.869***		
Temporal immediacy	If I buy _____, the positive impact on environmental pollution will occur in the near future	.819***	.677	.518	.755***	.675	.510
	it will promptly decrease environmental pollution	.603***			.671***		
Proximity	If I buy _____, my family and my close acquaintances will have the benefits of the behavior	.794***	.737	.492	.862***	.802	.583
	the community I belong to will also have the benefits of the behavior	.778***			.845***		
	the benefits of the behavior are not related to my family and my close acquaintances	-.492***			-.541***		
Social consensus	If I buy _____, the majority will consider it a desirable decision	.895***	.850	.656	.911***	.892	.734
	the majority will consider it a correct decision	.814***			.831***		
	the majority will consider it an ethical decision	.709***			.826***		
Purchase behavior	How likely are you to buy the following product?	.847***	.713	.559	.963***	.766	.634
	How often did you buy the following product?	.633***			.584***		

*** $p < .001$

Fit indices for the organic products: $\chi^2 = 413.594$ ($df = 264, p = .000$), $\chi^2/df = 1.567$, RMSEA = .042 (LO 90: .034, HI 90: .050, Pclose = .956), TLI = .950, CFI = .956, NFI = .887, PNFI = .781, PCFI = .841, GFI = .907, AGFI = .886, RMR = .084

Fit indices for the naturally dyed products: $\chi^2 = 419.875$ ($df = 264, p = .000$), $\chi^2/df = 1.590$, RMSEA = .043 (LO 90: .035, HI 90: .051, Pclose = .936), TLI = .956, CFI = .961, NFI = .903, PNFI = .795, PCFI = .846, GFI = .905, AGFI = .883, RMR = .083

Table 3 The comparison of AVE and SMC values: organic products

Items	Idealism	Relativism	Moral intensity
Idealism	<i>.516</i>		
Relativism	.029	<i>.484</i>	
Moral intensity	.118	.003	<i>.731</i>
Purchase behavior	.012	.001	.188

Italicized diagonal elements are the AVE for each construct. Off-diagonal elements are SMCs. All SMCs < all AVEs

For naturally dyed products, the loading values of each construct were also evaluated with CFA on the pooled second-order measurement model (Table 2). The same measurement items used for organic products were also included for the

Table 4 Comparison of AVE and SMC values: naturally dyed products

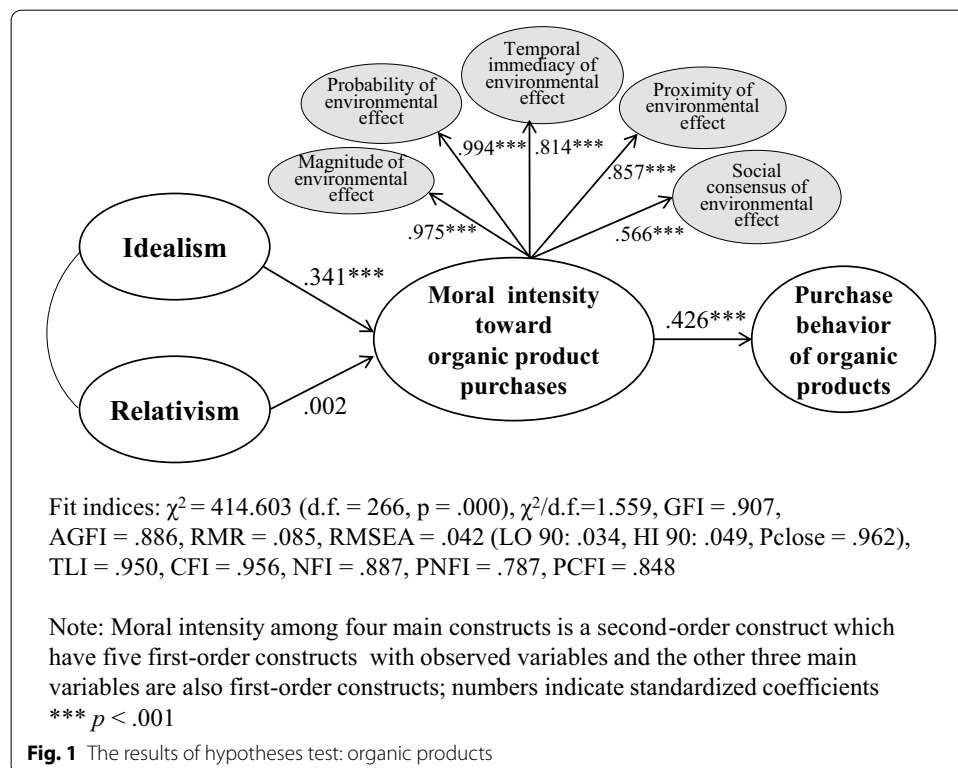
Items	Idealism	Relativism	Moral intensity
Idealism	.516		
Relativism	.029	.484	
Moral intensity	.121	.001	.718
Purchase behavior	.035	.009	.162

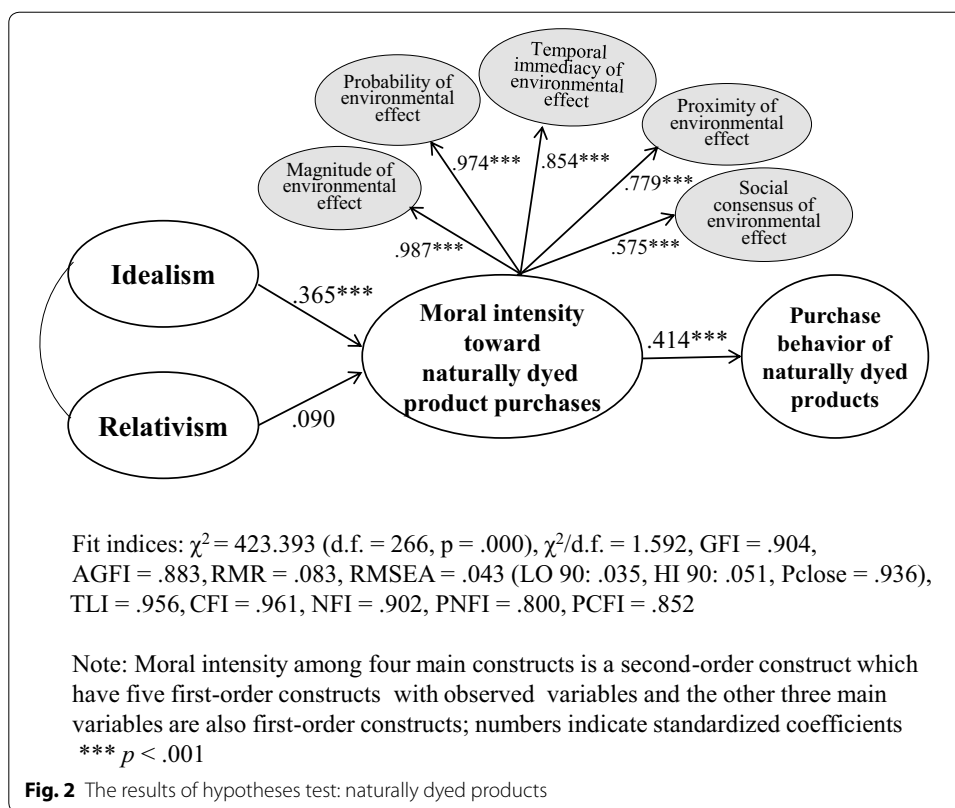
Italicized diagonal elements are the AVE for each construct. Off-diagonal elements are SMCs. All SMCs < all AVEs

naturally dyed product model. The CFA results confirmed a good model fit ($\chi^2/df = 1.590$, $RMSEA = .043$, $CFI = .961$, $TLI = .956$). The CR and AVE values of each construct were higher than the recommended values, with the exception of two variables for relativism (AVE = .484) and temporal immediacy (CR = .675), which had a marginal acceptance level. All AVE values were higher than all values for SMC (Table 4). Considering the significance of loading, CR, and AVE values as well as the comparison results for AVE and SMC, convergent and discriminant validities for all scales were confirmed for the naturally dyed product model. Descriptive statistic information for the naturally dyed product measurement items is presented in Additional file 1: Appendices 1 and 2.

Structural model and hypothesis tests

To test the hypotheses, two structural models were tested separately for each sustainable textile and apparel product. Fit indices of the pooled second-order path model for organic products are reported in Fig. 1, with overall acceptability ($\chi^2/df = 1.559$, $RMSEA = .042$, $CFI = .956$, $TLI = .950$). The effect of idealism on perceived moral intensity toward organic product purchases ($\gamma = .341$) and the effect of moral intensity





on organic product purchases ($\beta = .426$) were both significantly positive. However, the effect of relativism on the moral intensity toward organic product purchases was not significant. Therefore, regarding organic textile and apparel products, two hypotheses (H1-a and H3-a) were supported, while one hypothesis (H2-a) was rejected.

For naturally dyed products, fit indices of the pooled second-order path model were also acceptable ($\chi^2/df = 1.592$, RMSEA = .043, CFI = .961, TLI = .956). As shown in Fig. 2, idealism positively influenced perceived moral intensity toward naturally dyed product purchases ($\gamma = .365$), and moral intensity positively influenced purchase behavior ($\beta = .414$). However, the effect of relativism on moral intensity toward naturally dyed product purchases was not significant. Therefore, similar to the organic product model, for the naturally dyed product model, two hypotheses (H1-b and H3-b) were supported, while one hypothesis (H2-b) was rejected.

The indirect effects of idealism on the purchase behavior for each sustainable textile product were also determined. As shown in Table 5, the indirect effect of idealism on the purchase behavior of each organic and naturally dyed product was statistically significant, confirming the sequential relationship from idealism to purchase behavior.

As a follow-up to the rejection of the hypotheses regarding relativism (H2-a and H2-b), the direct impact of moral philosophy on purchase behavior was further analyzed with an alternative model in which the impacts of relativism and idealism on purchase behavior toward sustainable products were added to the original research model. For organic products, the alternative model had acceptable fit indices ($\chi^2 = 413.594$, $df = 264$, $p = .00$; $\chi^2/df = 1.567$; GFI = .907; AGFI = .886; RMSEA = .042, LO 90 = .034, HI 90 = .050,

Table 5 The indirect effects of moral philosophy on purchase behavior toward sustainable products

Model	Indirect paths	Standardized estimate	S.E.
Organic product model	Idealism → moral intensity toward organic product purchase → purchase behavior toward organic products	.145***	.033
Naturally dyed product model	Idealism → moral intensity toward naturally dyed product purchase → purchase behavior toward naturally dyed products	.151***	.034

*** $p < .001$

Pclose = .956; TLI = .950; CFI = .956). However, idealism (standardized $\gamma = -.034$, $p = .637$) and relativism (standardized $\gamma = .056$, $p = .436$) did not have significant direct effects on purchasing behavior. When comparing the indices of the research model and alternative model, the difference between two χ^2 values was insignificant ($\Delta\chi^2 = 1.009$, $df = 2$, $p > .05$), suggesting the fit indices of the alternative model were not better than those of the proposed organic model.

For naturally dyed products, the alternative model had acceptable fit indices ($\chi^2 = 419.875$, $df = 264$, $p = .00$; $\chi^2/df = 1.590$; GFI = .905; AGFI = .883; RMSEA = .043, LO 90 = .035, HI 90 = .051, Pclose = .936; TLI = .956; CFI = .961). Both idealism (standardized $\gamma = .031$, $p = .623$) and relativism (standardized $\gamma = -.103$, $p = .093$) did not have significant effects on purchase behavior toward naturally dyed products. When comparing the indices of the two models, the difference between the two χ^2 values was insignificant ($\Delta\chi^2 = 3.518$, $df = 2$, $p > .05$), supporting that the fit indices of the alternative model were not higher than those of the proposed model. Taking the results from the original model and the alternative model together, we discussed major findings in the following section.

Discussion

Based on the results of the hypothesis tests, three major findings were discovered. First, among Korean female consumers, the level of idealism had a positive relationship with the formation of moral intensity toward sustainable product purchases in both the organic and naturally dyed product models. However, the level of relativism did not relate to moral intensity toward either of the two product purchases. These differences between idealism and relativism appear to be attributable to consumers' recognition of environmental issues related to given products. Korean female consumers' idealistic concerns (e.g., regarding public welfare and absolute moral principles) seems to be associated with environmental issues related to organic and naturally dyed textile and apparel products. However, consumers' relativism (e.g., moral pluralism) is not related to perceptions that environmental issues related to organic and naturally dyed textile and apparel products are imperative or not. This finding is in line with those of previous research (Ha and Lennon 2006; Singh et al. 2007) which found that relativism had no effect on ethical judgment in the context of U.S consumers' purchase of counterfeit products and U.S. managers' ethical decisions. But, this finding is not consistent with the result showing that relativism influenced Chinese manager's ethical judgment (Singh

et al. 2007). Based on these findings, the effect of relativism on ethical decisions seems to depend on the situation (e.g., counterfeit purchase, sustainable purchase, ethical judgment in marketing settings) and culture whereas idealism appears to be a robust antecedent of ethical perception and behavior.

Second, this study identified that consumers' perceived moral intensity toward sustainable product purchases determined their purchase behavior toward these products. The finding suggests that when any moral intensity construct toward a product improves within consumers' perceptions, consumers are more likely to buy the product. For example, when consumers perceive an environmental benefit is great (i.e., the magnitude of consequence) resulting from the purchase of organic or naturally dyed products or they think that their purchase of these products would benefit people and places close to them (i.e., proximity of consequence), consumers are more likely to purchase sustainable products. This finding sheds light on the in-depth reasons behind consumer purchase behavior of environmentally sustainable textile and apparel products. Korean consumers' purchase of organic cotton products and naturally dyed products for health reasons (Park et al. 2015; Han and Chung 2014; Kim and Hong 2010) can be explained by Korean consumers' keen perception of the proximity dimension of moral intensity. Taking moral intensity as a guideline for sustainable products, the Korean textile and apparel industry could enhance product attributes based on other moral intensity dimensions to increase sales.

Third, the important role of moral intensity as a mediator between consumers' idealism and their purchase behavior toward sustainable products was confirmed. Combined with further analysis revealing that the direct effect of idealism on purchase behavior was not significant, this finding supports the cognitive hierarchy model (Homer and Kahle 1988; Kahle 1980) suggesting sequential influence from abstract cognition (moral philosophy) through domain-specific cognition (moral intensity) to specific behavior (purchase). Using the construct of moral intensity, this study revealed the process of how consumers' idealistic propensity was involved in forming their purchasing behavior toward such products.

Conclusion

This study investigated the impact of individuals' moral philosophy and moral intensity toward organic and naturally dyed textile and apparel product purchases on consumer purchase behavior toward the products. With Korean female consumer data, this study revealed that only idealism, of the two dimensions of moral philosophy, had a significant impact on the level of moral intensity toward both organic and naturally dyed textile and apparel product purchase in relation to environmental sustainability, and the level of moral intensity positively influenced consumer purchase behavior toward organic and naturally dyed textile and apparel products. As such, idealism was confirmed as an antecedent of Korean female consumers' purchase behavior toward environmentally sustainable textile and apparel products, which is only through the mediator role of moral intensity. Moral intensity was also confirmed as an important factor that directly leads Korean female consumers' purchase of such sustainable products.

Academic contributions

This study makes several academic contributions to the ethical consumption literature. First, this study supplies new knowledge related to Korean consumers' sustainable textile and apparel purchase behavior. As the ethics-related beliefs and behavior in this research depend on a specific situation and culture (Auger et al. 2007; ECI 2016), research on different situations and different cultures may not be generalizable to explain the motivations and behavior of Korean consumers with regard to the sustainable textile and apparel market. The findings are expected to deepen current understanding of Korean consumer behavior as it relates to the sustainable textile and apparel market and fill a gap in existent studies due to their focus on a limited number of topics and primarily on Western-consumers.

Second, this research expands the existing literature on consumer behavior toward sustainable textile and apparel products by including consumers' moral philosophy and moral intensity, which have rarely been employed in textile and apparel literature. To our knowledge, this is the first attempt to apply consumers' moral philosophy and moral intensity to sustainable textile and apparel product consumption from an ethical viewpoint. This study provides a deeper understanding of the environmentally ethical consumption mechanism in the textile and apparel domain by identifying relationships among consumers' fundamental beliefs and perceptions and a wide range of consumer age groups.

Third, unlike most previous research applying moral intensity to predict unethical purchasing behavior, such as pirated software purchases, that focus on harm or loss (Freestone and McGoldrick 2008; Chan and Lai 2011), the current study is the first to apply moral intensity to the study of the benefits of environmentally ethical purchasing behavior. Little was known about consumers' specific perceptions of the environmental benefits attained through the purchase of sustainable products and how these affect the purchasing behavior of a large sample. This study fills this critical research gap and contributes to the current understanding of how apparel firms' environmentally ethical activities, including product development, are perceived by consumers and influence their buying behavior. This study could ultimately contribute to increasing sustainable textile products' sales by providing an understanding of the effects of consumers' ethical positions and their perceptions of the benefits of sustainable products.

Fourth, this study provides a product-specific measurement for the moral intensity construct, focusing on consumers' purchasing of environmentally sustainable textile and apparel products. This measure is applicable to socially sustainable textile and apparel products that are defined as ethical fashion products (Joergens 2006), which are made in better working conditions, without animal abuse, or with fair-trade and recycling or upcycling methods. It was confirmed that this measurement had relatively good convergence and discriminant validity; thus, this study promotes research of both environmentally and socially sustainable products using the constructed measurement. The results of this study also contribute to stimulating consumer research on naturally dyed products, for which there is limited research available for Korea and other countries on a global scale.

Managerial implications

This study also provides practical implications that fashion marketers should consider when developing and marketing sustainable products. First, marketers need to target people with high idealism as an individual's higher idealism was identified as a significant factor leading to greater purchase behavior. In their communication with target consumers, marketers may need to emphasize public welfare as it pertains to environmental issues to convince consumers that people's actions can help to resolve environmental issues and thereby encourage purchases.

Second, marketers should utilize the benefits to consumers related to moral intensity that were found to be significant in the study to encourage the purchase of sustainable textile and apparel products. The most significant obstacle to ethical consumption is frequently consumers' low level of recognition of the ethical or unethical consequences of their purchases (Bray et al. 2010). Therefore, in communication with consumers, marketers should focus on the benefits generated from purchasing environmentally sustainable products based on specific sub-dimensions of moral intensity. For example, advertisements may need to stress what and how significant positive consequences for the environment (magnitude of consequence) can result from purchasing sustainable textile and apparel products as well as the global trends related to sustainable consumption (social consensus).

Limitations and future research

Although this study has several limitations, they also provide multiple opportunities for future research. The data were limited to women, and male consumers might have different perspectives; thus, male beliefs and perceptions of moral intensity toward sustainable apparel and the effects of these on responses toward such products need to be investigated in future research. Despite surveying a wide range of age groups, the sample size for women in their 50s was relatively small since data were collected online, where women of this age are less active than other age groups. Thus, to improve the generalizability of the study's findings and to understand the differences among various groups in terms of sustainable product purchases, future research may need to explore whether the relationships discovered in this study apply to different types of sustainable textile products used by different genders and age groups.

Additional file

Additional file 1. Appendix 1. The means and standard error of measurement items: moral philosophy. **Appendix 2.** The means and standard error of measurement items: moral intensity and purchase behavior.

Abbreviations

EPO: Ethics position questionnaire pertaining to idealism and relativism; CR: composite reliabilities; AVE: average variance extracted; RMSEA: root mean square error of approximation; CI: confidence interval; GF: goodness-of-fit index; AGFI: adjusted goodness-of-fit-index; TL: Tucker–Lewis index; CFI: comparative fit index; VIF: variance inflation factor.

Authors' contributions

HH was a major contributor in writing the manuscript. She provided the data and the guidelines for the manuscript development, analyzed and interpreted the survey data, and discussed the results. JHK mainly conducted the introduction and literature reviews related to the research topic, and discussed the results by synthesizing literature. All authors read and approved the final manuscript.

Author details

¹ Professor, Department of Fashion and Textiles, Jeju National University, Jeju, South Korea. ² Assistant Professor, Department of Textiles, Fashion Merchandising and Design, The University of Rhode Island, Kingston, USA.

Acknowledgements

Not applicable.

Competing interests

The authors declare that they have no competing interests.

Availability of data and materials

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Funding

This work was supported by the research grant of Jeju National University in 2018.

Publisher's Note

Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Received: 2 July 2018 Accepted: 6 January 2019

Published online: 16 May 2019

References

- Arbuckle, J. L. (2003). Amos 5.0 [Computer software] SPSS. Chicago: IL.
- Auger, P., Devinney, T. M., & Louviere, J. J. (2007). Using best–worst scaling methodology to investigate consumer ethical beliefs across countries. *Journal of Business Ethics*, 70(3), 299–326.
- Bray, J., Johns, N., & Kilburn, D. (2010). An exploratory study into the factors impeding ethical consumption. *Journal of Business Ethics*, 98, 597–608.
- Chan, R. Y. K., & Lai, J. W. M. (2011). Does ethical ideology affect software piracy attitude and behavior? An empirical investigation of computer users in China. *European Journal of Information Systems*, 20, 659–673.
- Chih, J.-T., & Chen, P.-S. (2010). An empirical study on moral intensity. *The Journal of International Management Studies*, 5(2), 71–81.
- Cho, S. H. (2008). *Chinhwangeong jepum sobija ingi geubsangseung* [Eco-friendly products become more and more popular]. *The International Textile Fashion News*. Retrieved November 27, 2018, from <http://www.itnk.co.kr/news/articleView.html?idxno=24221>.
- Cho, S. H. (2009, August 10). *Welbing seomyu oganig koteun daese* [Well-being material, organic cotton is very popular]. *The International Textile Fashion News*. Retrieved November 27, 2018, from <http://www.itnk.co.kr/news/articleView.html?idxno=26533>.
- Cho, S. K., & Han, E. J. (2015). Tendency of consumption and safety certification for infant's organic cotton apparel. *Journal of the Korean Society of Clothing and Textiles*, 39(6), 924–937.
- Cho, J. I. (2012, October 12). *Gyeongbuk cheonyeon yeomsaek saneob yeonguwon gaewonsik* [Gyeongbuk Natural Color Industry Institute Open Event]. *Yeomnam Daily YN News*. Retrieved November 27, 2018, from <http://www.ynnews.kr/news/articleView.html?idxno=79664>.
- Consumer activists call for compensation over 'radon mattress' scandal. (2018, May 21). *The Korea Times*. Retrieved November 27, 2018, from http://www.koreatimes.co.kr/www/nation/2018/05/113_249373.html.
- Dunfee, T. W., & Warren, D. E. (2001). Is guanxi ethical? A normative analysis of doing business in China. *Journal of Business Ethics*, 32(3), 191–204.
- Ethics & Compliance Initiative. (2016). 2016 Global business ethics survey: Measuring risk and promoting workplace integrity. Retrieved November 27, 2018, from <https://www.ethics.org/wp-content/uploads/2018/09/GBESFinal-1.pdf>.
- Fashion industry hot issue (2018, December 1). 2018 paesyoneopge hat isyu [2018 fashion industry hot issue]. Fashion Channel. Retrieved November 29, 2018, from <http://www.f-channel.co.kr/main/news.php?table=papernews&query=view&uid=8532&p=1>.
- Fear of chemicals in everyday life, chemophobia. (2017, September 5). *Arirang*. Retrieved November 27, 2018, from http://www.arirang.co.kr/Tv2/TVCommon_NoStaff_Archive.asp?sys_lang=Eng&PROG_CODE=TVCR0802&MENU_CODE=102346&view_seq=24155&cnt=1.
- Feinberg, M., & Willer, R. (2013). The moral roots of environmental attitudes. *Psychological Science*, 24(1), 56–62.
- Forsyth, D. R. (1980). A taxonomy of ethical ideologies. *Journal of Personality and Social Psychology*, 39, 175–184.
- Forsyth, D. R., & Nye, J. L. (1990). Personal moral philosophies and moral choice. *Journal of Research in Personality*, 24(4), 398–414.
- Fraedrich, J. P., & Ferrell, O. C. (1992). The impact of perceived risk and moral philosophy type on ethical decision making in business organizations. *Journal of Business Research*, 24(4), 283–295.
- Freestone, O. M., & McGoldrick, P. J. (2008). Motivations of the ethical consumer. *Journal of Business Ethics*, 79, 445–467.
- Gam, H. J. (2011). Are fashion-conscious consumers more likely to adopt eco-friendly clothing? *Journal of Fashion Marketing and Management: An International Journal*, 15(2), 178–193.
- Gong, G. A., Park, Y. M., Lee, J. I., & Choi, J. M. (2014). Awareness and purchase practice of environment-friendly fashion products. *Journal of Human Ecology*, 18(1), 95–104.
- Gross, L., & Birnbaum, L. S. (2017). Regulating toxic chemicals for public and environmental health. *PLOS Biology*, 16(1). Retrieved from <https://journals.plos.org/plosbiology/article?id=10.1371/journal.pbio.2004814>.

- Gyeongbuk Natural Color Industry Institute. (2011). *Survey on the status of natural dyeing industry in Gyeongbuk and the establishment of development strategy*. Gyeongbuk: Author.
- Ha, S., & Lennon, S. (2006). Purchase intent for fashion counterfeit products: ethical ideologies, ethical judgments, and perceived risks. *Clothing & Textiles Research Journal*, 24(4), 297–315.
- Ha-Brookshire, J. E., & Hodges, N. N. (2009). Socially responsible consumer behavior? Exploring used clothing donation behavior. *Clothing and Textiles Research Journal*, 27(3), 179–196.
- Ha-Brookshire, J. E., & Norum, P. S. (2011). Willingness to pay for socially responsible products: case of cotton apparel. *Journal of Consumer Marketing*, 28(5), 344–353.
- Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2010). *Multivariate data analysis* (7th ed.). Upper Saddle River, NJ: Prentice Hall.
- Han, T. I., & Chung, J. E. (2014). Korean consumers' motivations and perceived risks toward the purchase of organic cotton apparel. *Clothing and Textiles Research Journal*, 32(4), 235–250.
- Hartman, J. B., Shim, S., Barber, B., & O'Brien, M. (2006). Adolescents' utilitarian and hedonic Web consumption behavior: hierarchical influence of personal values and innovativeness. *Psychology & Marketing*, 23(10), 813–839.
- Hill, J., & Lee, H. H. (2012). Young generation Y consumers' perceptions of sustainability in the apparel industry. *Journal of Fashion Marketing and Management: An International Journal*, 16(4), 477–491.
- Hines, J. D., & Swinker, M. E. (1996). Consumers' willingness to purchase apparel produced from recycled fibers. *Journal of Family and Consumer Sciences*, 88, 41–44.
- Homer, P. M., & Kahle, L. R. (1988). A structural equation test of the value-attitude-behavior hierarchy. *Journal of Personality and Social Psychology*, 54(4), 638–646.
- Hong, H., & Kim, G. (2010). Differences between purchasers and non-purchasers of naturally dyed-products-usage of Media, Media program, and information sources -. *Journal of the Korean Society of Clothing and Textiles*, 34(1), 79–91.
- Hong, H. S., & Koh, A. R. (2009). The effects of benefits pursued to clothing on the purchase intention of apparel for consumers well-being - Eco-friendly and health-functional apparels-. *Journal of the Korean Society of Clothing and Textiles*, 33(11), 1839–1852.
- Hyllegard, K. H., Yan, R. N., Ogle, J. P., & Lee, K. H. (2012). Socially responsible labeling: the impact of hang tags on consumers' attitudes and patronage intentions toward an apparel brand. *Clothing and Textiles Research Journal*, 30(1), 51–66.
- Im, H. D. (2017, August 1). Paesyeonsaneobe buneun chinhwangyeong baram [Environmental trends in fashion industry]. *Eco & Future*. Retrieved November 29, 2018, from <http://www.ecofuturenetwork.co.kr/news/articleView.html?idxno=14307>.
- Joergens, C. (2006). Ethical fashion: myth or future trend? *Journal of Fashion Marketing and Management*, 10, 360–371.
- Jones, T. (1991). Ethical decision making by individuals in organizations: An issue-contingent model. *Academy of Management Review*, 16(2), 366–395.
- Jun, S. A. (2014, January 4). Ijoneun jisokgaeungseongjang (Sustainable) paesyeonida (sang) [Now, it is sustainable fashion]. *Fashion Journal*. Retrieved November 29, 2018, from <http://fashionjl.blogspot.com/2014/01/sustainable.html>.
- Kahle, L. R. (1980). Stimulus condition self-selection by males in the interaction of locus of control and skill-chance situations. *Journal of Personality and Social Psychology*, 38(1), 50–56.
- Kim, G.-E., & Hong, H. (2010). Market segmentation of naturally-dyed products based on consumers' attitudes and consumption Behavior. *Journal of Consumption Culture*, 13(4), 163–188.
- Kline, R. B. (2005). *Principles and practice of structural equation modeling* (2nd ed.). NY: Guilford.
- Korean Environment Institute. (2016). *Kukmin hwankyeong uisik josa Yeongu* [Korean environmental awareness investigation report]. Retrieved November 27, 2018, from <http://www.neins.go.kr/ltr/researchreport/index.asp?mode=view&seq=712007>.
- Lee, M. Y. (2016, December 4). Yuginongiraneun 'oganikkoteun', jeongmal mome jonnayo?tt 'goga'ui bimireun [Is 'organic cotton' known to be organic really good for health? ...the secret of 'high price']. *Moneytoday*. Retrieved November 29, 2018, from <http://news.mt.co.kr/mtview.php?no=2016120109012984346>.
- Lee, N., Choi, Y. J., Youn, C., & Lee, Y. (2012). Does green fashion retailing make consumers more eco-friendly? The influence of green fashion products and campaigns on green consciousness and behavior. *Clothing and Textiles Research Journal*, 30, 67–82.
- Lee, M. S., & Ryou, E. J. (2011). Consumption behavior according to purchase experience of natural dyeing fashion products. *Journal of the Korean Society Design Culture*, 17(3), 526–540.
- Muthu, S. S. (2014). *Assessing the environmental impact of textiles and the clothing supply chain*. Waltham, MA: Elsevier.
- Newberry, C. R., Klemz, B. R., & Boshoff, C. (2003). Managerial implications of predicting purchase behavior from purchase intention: A retail patronage case study. *The Journal of Services Marketing*, 17(6/7), 609–620.
- Oh, T. H. (2017). Chinhwangyeong seomyu gisul gaebaldonghyang [Report on environmentally friendly fiber technology development]. *Korea Textile Development Institute*. Retrieved November 29, 2018, from http://super.textopia.or.kr:8888/newsletter/170822/lib02_1.pdf.
- Oppenheim, J., & Stuchtey, M. (2015). Like it or not, sustainability is now core to your business. *Fortune*. Retrieved November 27, 2018, from <http://fortune.com/2015/09/24/sustainability-practices-in-business-intel-unilever-wal-mart-dupont/>.
- Organic Trade Association. (2017). Organic wool fact sheet. Retrieved December 17, 2016, from https://ota.com/sites/default/files/indexed_files/OrganicWoolFactSheet_Final.pdf.
- Park, H. (2005). The role of idealism and relativism as dispositional characteristics in the socially responsible decision-making process. *Journal of Business Ethics*, 56, 81–98.
- Park, Y. H. (2011). A study on the appraisal standard for purchasing the clothing made of organic cotton and the post-purchase satisfaction and dissatisfaction-Focused on the adult women in from their 20's to 50's-. *Journal of Fashion Business*, 15(1), 50–62.
- Park, H., Park, M., & Cho, S. (2015). Differences between purchase behavior and perception of organic clothing goods on university students. *Journal of the Korea Academia-Industrial Cooperation Society*, 16(6), 3742–3752.
- Rudell, F. (2006). Shopping with a social conscience: Consumer attitudes toward sweatshop labor. *Clothing and Textiles Research Journal*, 24(4), 282–296.
- Samanta, A. K. & Konar, A.(2011). Dyeing of Textiles with Natural Dyes. *Natural Dyes*. Retrieved November 27, 2018, from <http://www.intechopen.com/books/natural-dyes/dyeing-of-textiles-with-natural-dyes>.

- Singh, J. J., Vitell, S. J., Al-Khatib, J., & Clark, I. (2007). The role of moral intensity and personal moral philosophies in the ethical decision making of marketers: A cross-cultural comparison of China and the United States. *Journal of International Marketing*, 15(2), 86–112.
- Singhapakdi, A., Vitell, S. J., & Franke, G. R. (1999). Antecedents, consequences, and mediating effects of perceived moral intensity and personal moral philosophies. *Journal of the Academy of Marketing Science*, 27(1), 19–36.
- Statistics Korea. (2016). Household income & expenditure trends in the fourth quarter and in 2015. Retrieved November 27, 2018, from <http://kostat.go.kr/portal/eng/pressReleases/1/index.board?bmode=read&aSeq=353378>.
- Technavio. (2015). Demand for natural dyes will directly impact the global dyestuff market for textile fibers through 2019^o Technavio. Retrieved November 29, 2018, from <https://www.businesswire.com/news/home/20150619005140/en/Demand-Natural-Dyes-Impact-Global-Dyestuff-Market>.
- Ton, P. (2007). Organic Cotton: an opportunity for trade. *International Trade Center*, Retrieved December 17, 2016, from <http://orgprints.org/22200/7/22200.pdf>.
- Van Liere, K. D., & Dunlap, R. E. (1978). Moral Norms and Environmental Behavior: An Application of Schwartz's Norm-Activation Model to Yard Burning 1. *Journal of Applied Social Psychology*, 8(2), 174–188.
- World Commission on Environment and Development. (1987). *Our common future*. New York: Oxford University Press.

Submit your manuscript to a SpringerOpen[®] journal and benefit from:

- ▶ Convenient online submission
- ▶ Rigorous peer review
- ▶ Open access: articles freely available online
- ▶ High visibility within the field
- ▶ Retaining the copyright to your article

Submit your next manuscript at ▶ springeropen.com
