THE ROLE OF VALUES, ENVIRONMENTAL SELF-IDENTITY, SOCIAL NORMS, AND INTRINSIC MOTIVATIONS IN CONSUMERS' ECO-FRIENDLY APPAREL PURCHASING BEHAVIOR

by

SOO HYUN KIM

(Under the Direction of Yoo-Kyoung Seock)

ABSTRACT

This study investigated if altruistic, biospheric, egoistic, and hedonic values can be distinguished empirically and whether these values are uniquely related to intrinsic motivations. This study also demonstrated that obligation-based and enjoyment-based intrinsic motivations can be distinguished empirically and examined the extent to which intrinsic motivations predicted relationship with eco-friendly apparel purchasing behavior. Finally, this study assessed the influence of social norms and environment self-identity on intrinsic motivations in eco-friendly apparel purchasing behavior. A total of 317 samples in the USA were collected from using Qualitrics.com. The data analysis consisted of exploratory factor analyses, hierarchical regression analysis, and multiple regression analyses.

The results of this study provide that bio-altruistic, egoistic, and hedonic value orientation were distinguished empirically and these values were found to be differently and uniquely related to related to intrinsic motivations. This study provides support for the reliability and validity of two different intrinsic motivation routes – obligation-based and enjoyment-based motivations. When enjoyment-based motivation was entered to hierarchical regression equation

with obligation-based motivation, changes in R^2 were significant compared to obligation-based motivation alone. Both obligation-based and enjoyment-based motivations were significant predictors of eco-friendly apparel purchasing. Furthermore, environmental self-identity was found to be the strongest predictor of intrinsic motivations, and descriptive norms and injunctive norms were found to be differently and uniquely related to related to intrinsic motivations.

The findings of this study suggest that when non-profit organizations and marketers design messages or interventions to promote eco-friendly apparel purchasing behavior, it is important to for them to 1) strengthen environment self-identity; 2) strengthen egoistic values, environment self-identity, and descriptive norms to activate consumers' obligation-based motivations; or 3) altruistic values, environmental self-identity, and injunctive norms to activate enjoyment-based motivations.

INDEX WORDS: Altruistic values, Biospheric values, Egoistic values, Hedonic values, Eco-friendly apparel, Environmental self-identity, Descriptive norm, Injunctive norm, Obligation-based motivation, Enjoyment-based motivation

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CHAPTER 1

INTRODUCTION

The negative effects on the environment created by textiles and apparel products are considerably significant (Thøgersen, 2014). The textile industry produces various types of wastes, including wastewater, solid waste, and gas and heat emissions (Dickson, Eckman, & Loker, 2009; Moore & Ausley, 2004; Reddy, Chen, Zhang, & Yang, 2014). Furthermore, the textile dyeing and finishing industry has been a principal chemical polluter of clean water, second only to agriculture (Kant, 2012). The World Bank estimates that "17 to 20 percent of industrial water pollution discharged from textile dyeing and finishing treatment is attributed to fabric. Some 72 toxic chemicals have been identified in water resulting solely from textile dyeing, 30 of which cannot be removed" (as cited in Kant, 2012, p. 23). Many of those unremoved chemicals are poisonous and can be directly and indirectly damaging to human health (Kant, 2012; Parisi, Fatarell, Spinelli, Pogni, & Basosi, 2015).

Due to the environmental impacts and negative effects on human health caused by the textile and apparel industry, sustainable apparel design development, production, retailing, and consumption are becoming more important in both academic research (Armstrong & LeHew, 2011; Gam, Cao, Farr, & Heine, 2009) and industrial practices (Golden, Subramanian, & Zimmerman, 2011). Eco-conscious consumers make thoughtful efforts to engage in environmental apparel consumption: by purchasing on a needs-basis and extending the lifetime of their clothing, acquiring apparel made from materials perceived to be environmentally preferable, and acquiring apparel from environmentally preferable sources. Additionally, eco-

conscious consumers perceive their apparel acquisition behaviors to be eco-conscious (Hiller Connell, 2011). The textiles and apparel industry has recently taken actions to reduce environmental impacts in response to consumers' environmental concerns. For example, leading apparel companies, suppliers, trade organization, non-profit organizations, and academic institutions collectively founded the Sustainable Apparel Coalition (SAC) in 2011, the goal of which is to produce no unnecessary environmental damage or negative impacts on human health associated with its activities (SAC, 2015).

It is evident that the current apparel industry, in terms of both production and consumption, is unsustainable (Hiller Connell & Kozar, 2012). There is a consensus that consumer behavioral change is needed in order to reduce environmental impacts and improve positive impacts on human health (De Young, 1993), but a substantial gap exists between the stated pro-environmental concerns and the actual consumption behaviors of green consumers (Davari & Strutton, 2014). In addition, only a small group of consumers actually take environmental concerns into account when shopping for apparel (Butler & Francis, 1997; Hiller Connell, 2011). It is thus critical to understand which factors influence consumers' pro-environmental apparel consumption behavior. Eco-friendly apparel consumption behavior is more likely to change when pro-environmental apparel companies, education institutions, non-profit organizations, and governments address these factors.

A considerable body of consumer academic research attempts to understand the factors underlying this environmental product consumption gap, employing individual rational-choice models such as the theory of reasoned action (TRA) (Dickson & Littrell, 1996; Halepete, Littrell, & Park, 2009; Littrell, Ma, & Halepete, 2005) or theory of planned behavior (TPB) (Cowan & Kinley, 2014; Kang & Kim, 2012; Kang, Liu, & Kim, 2013; Zheng & Chi, 2015). Meanwhile,

researchers who view pro-environmental intentions and behaviors as being encouraged by pro-social motives generally adopt the value-belief-norm theory (VBN) (Han, 2015; Stern, Dietz, Abel, Guagnano, & Kalof, 1999). The VBN model is comprised of values, the new environmental paradigm (NEP), awareness of consequences (AC), ascription of responsibility (AR), and personal norm (PN) to take pro-environmental actions (Stern, 2000; Stern et al., 1999). Each of these variables is significantly related causally to the next (Steg, Dreijerink, & Abrahames, 2005). The VBN theory assumes that an individual's pro-environmental intention and behavior are determined by personal norms activated by a sequential process of values, the new environmental paradigm (NEP), awareness of consequences (AC), and ascription of responsibility (AR) (Klöckner, 2013; Stern, 2000; Stern et al., 1999). For example, biospheric and altruistic values positively influence NEP, while egoistic values negatively influence it; awareness of negative environmental consequences caused by energy use is higher among respondents who have high NEP scores; the perceived responsibility for the problems resulting from energy use is higher among respondents who are aware of these problems and strongly influences their personal norm; and the stronger their personal norm, the more an individual supports policies aimed at reducing CO_2 (Steg et al., 2005).

Many studies suggest that the VBN theory can be generalized to other behavioral domains such as the marine context (Wynveen & Sutton, 2015), travel (Han, 2015), energy conservation (Karatasou, Laskari, & Santamouris, 2014), recycling (Saphores, Ogunseitan, & Shapiro, 2012), and climate change (Chen, 2015). To date, researchers have used either the full model or a partial model of the VBN theory to explain consumers' pro-environmental behaviors (Kaiser, Hübner, & Bogner, 2005; Steg, De Groot, Dreijerink, Abrahamse, & Siero, 2011; van Riper & Kyle, 2014). However, few studies have attempted to extend the VBN model by adding

variables to better explain consumers' pro-environmental product purchasing behavior (Choi, Jang, & Kandampully, 2015). In addition, there is limited research examining antecedent pro-social motives stimulating individuals' pro-environmental intentions or behaviors in the textile and apparel domain using VBN theory (Kim, Oh, & Jung, 2015). Therefore, this study uses the extended VBN model combined with environmental self-identity and social norms as a guide to explore consumers' eco-friendly apparel purchasing behavior.

It is increasingly identified that values play a critical role in motivating sustainable behavior (Engqvist Jonsson & Nilsson, 2014; Gifford & Nilsson, 2014; Howell & Allen, 2016). Values are "desirable trans-situational goals, varying in importance, that serve as guiding principles in the life of a person or other social entity" (Schwartz, 1994, p. 21) and are likely to develop early in life (Stern, Dietz, & Guagnano, 1995). Studies show that values are related to NEP, personal norms, and behavior (Klöckner, 2013: Schultz, Gouveia, Cameron, Tankha, Schmuck, & Franěk, 2005; Schultz & Zelezny, 1999).

Using Schwartz's value inventory, Stern (2000) and Stern, Dietz, and Guagnano (1998) suggest that three values motivate environmental concern: egoistic, altruistic, and biospheric values. Egoistic values, which focus on maximizing personal gains, are negatively related to environmental behavior. However, altruistic values, which reflect appreciation for social justice and other people's well-being, and biospheric values which place weight on non-human species and the environment, are positively related to environmental behavior (Klöckner, 2013; Liobikienė, & Juknys, 2016; Schultz et al., 2005; Thøgersen & Ölander, 2002). Thøgersen and Ölander (2002) noted that Stern and his colleagues used a short version of Schwartz's value inventory, one that did not include some motivational values such as hedonic values which focus on an individual's feelings of pleasure and enjoyment and are one of the important antecedents

of pro-environmental behaviors. Furthermore, some studies have demonstrated that hedonic values are one of the antecedents of environmental beliefs and behaviors (Lind, Nordfjærn, Jørgensen, & Rundmo, 2015; Steg, Perlaviciute, van der Werff, & Lurvink, 2014). Therefore, this study adds hedonic values to the value system that includes egoistic, altruistic, and biospheric values.

Self-identity is defined as the label used to describe an individual (Cook, Kerr, & Moore, 2002) and is the salient and enduring aspect of self that extends to his/her particular behavior (Conner & Armitage, 1998; Rise, Sheeran, & Hukkelberg, 2010; Stryker & Burke, 2000). Many studies argue that self-identity is one key predictor of intentions and behaviors in the environmental domain, including green consumerism (Sparks & Shepherd, 1992), recycling (Nigbur, Lyons, & Uzzell, 2010), household food waste reduction (Graham-Rowe, Jessop, & Sparks, 2015), environmentally friendly apparel selection (Dermody, Hanmer-Lloyd, Koenig-Lewis, & Zhao, 2015; Kim, Lee, & Hur, 2012a; Zheng & Chi, 2015), and electric car adoption (Barbarossa, Beckmann, De Pelsmacker, Moons, & Gwozdz, 2015). From those results, it can be interpreted that people with a strong environmental self-identity are more likely to engage in environmentally friendly behaviors, even though acting in an environmentally friendly manner may be somewhat costly or effortful. However, it is not clear why people with a strong environmental self-identity act pro-environmentally even without external gains or incentives. Indeed, Frey (1997) argued that when environmental self-identity is strong, the motivation to act in an environmentally friendly way springs up from people's internal goals rather than external incentives. This study proposes that people with a strong environmental self-identity are intrinsically motivated to purchase eco-friendly clothing because when people are intrinsically motivated, purchasing pro-environmental apparel is inherently satisfying or enjoyable (Ryan &

Deci, 2000). Therefore, this study assumes that environmental self-identity influences intrinsic motivations, which in turn affects eco-friendly apparel purchasing behavior.

People often ignore or underestimate the degree to which their actions are determined by similar actions of others (Cialdini, 2005). Nolan and her colleagues showed empirical evidence that descriptive normative beliefs were the strongest predictor of energy conservation behavior even though they were indicated by the respondents as the least important factor to conserve energy (Nolan, Schultz, Cialdini, Goldstein, & Griskevicius, 2008). Social norms are standards and rules about how people do and should behave (Hecter & Opp, 2005; Newell, McDonald, Brewer, & Hayes, 2014) and influence an individual's behavior. Because of this, the concept of social norms is being accepted as a key component of motivation to practitioners and academia (Kameda, Takezawa, & Hastie, 2005; Reynolds, Subašić, & Tindall, 2015).

Within social norms literature that relates to the influences of other human beings, the theory of normative conduct (Cialdini, Reno, & Kallgren, 1990) has two distinct types of social norms which influence an individual's behavior: descriptive norms and injunctive norms. According to Cialdini et al. (1990), descriptive norms are defined as what most others do, while injunctive norms are defined as rules or sanctions placed on a person's behavior by others. Descriptive and injunctive norms differently influence behavioral change based on the situation, such as littering (Cialdini et al., 1990), saving energy (Allcott & Rogers, 2012; Nolan et al., 2008; Schultz, Nolan, Cialdini, Goldstein, & Griskevicius, 2007), and recycling (Abbott, Nandeibam, & O'Shea, 2013; Czajkowski, Hanley, & Nyborg, 2015; Thomas & Sharp, 2013). Even though there is clear evidence that both descriptive and injunctive norms are consistently strong predictors of pro-environmental behaviors, little attention has been given to how both descriptive and injunctive norms differently influence people's eco-friendly apparel purchasing

behavior (Kim, Lee, & Hur, 2012b). In addition, literature suggests that personal norms may be internalized social norms rather than the result of the individual's own moral reflection (Deci & Flaste, 1995; Schwatrz, 1977; Thøgersen, 1999, 2006).

Therefore, this study assumes that descriptive norms and injunctive norms may influence consumers' intrinsic motivation for eco-friendly apparel purchasing behavior and tests both relationships: descriptive norms and intrinsic motivations for eco-friendly apparel purchasing behavior, and injunctive norms and intrinsic motivations for eco-friendly apparel purchasing behavior. These analyses can offer an important point regarding how apparel companies, non-profit organizations, and government should develop communication strategies to promote eco-friendly apparel.

A substantial body of research guided by the VBN theory is related to the personal norm that describes an obligation- or feeling guilt-based intrinsic motivation to explain an individual's pro-environmental behavior. The main reasoning for this approach is that pro-environmental behaviors are often associated with costs (e.g., money, time, effort, inconvenience) and are considered boring or tedious (Hobman & Frederiks, 2014; van der Werff, Steg, & Keizer, 2013a). Many people engage in pro-environmental behaviors even though they are costly and effortful because people feel guilty about not doing the right thing or feel morally obliged to do so. Most of the studies that have applied the VBN theory to explain people's pro-environmental behaviors did not test another route of intrinsic motivation, enjoyment-based, because it may be less relevant in the environmental domain (van der Werff et al., 2013a). However, the question remains whether people act and live environmentally friendly and are happy and satisfied in life simultaneously. Some self-interested individuals engage in ethical consumption even though any tangible benefits they may receive from purchasing environmentally friendly products are worth

less than what they paid for (Starr, 2009). Some people may actually enjoy cycling back home after work instead of driving home by car. Similarly, consumers enjoy clothing shopping (Kim & Hong, 2011; Michaelidou & Dibb, 2006). Consumers leisurely shop for clothing and actually enjoy shopping beyond its utilitarian purpose (Cho & Workman, 2014; Hansen & Jensen, 2009; Seock & Chen-Yu, 2007; Workman, 2010; Workman & Cho, 2012). Furthermore, consumers not only wear and purchase sustainable organic cotton clothing products to express their environmental values (Gutman & Mills, 1982; Han & Chung, 2014) but also to dress well (Gam, 2011; Han & Chung, 2014; Moon, Lai, Lam, & Chang, 2014).

Therefore, this study argues that two types of intrinsic motivation should be distinguished in eco-friendly apparel purchasing behavior: enjoyment-based intrinsic motivation (Lindenberg, 2001: van der Werff et al., 2013a) and obligation-based intrinsic motivation (De Groot & Steg, 2007; Lindenberg, 2001; Stern, 2000; Stern et al., 1999). This study assumes that when individuals have a strong enjoyment-based intrinsic motivation, they are likely to purchase eco-friendly apparel because they enjoy doing so. When individuals have a strong obligation-based intrinsic motivation, they are inclined to purchase eco-friendly apparel because they feel it is the right thing to do and feel guilty for not doing so.

To date, despite the great interest in consumers' pro-environmental behaviors, the theoretical application of the Value-Belief-Norm (VBN) theory has rarely been used to investigate consumers' eco-friendly apparel purchasing behavior. The purpose of this study is to expand existing literature about consumers' pro-environmental apparel purchasing behavior by developing and testing an extended VBN theory. More specifically, this study incorporates environmental self-identity and social norms into the VBN model. Additionally, this study adds hedonic values to the value system and separates enjoyment-based intrinsic motivation from

obligation-based intrinsic motivation under the construct of intrinsic motivations as a theoretical framework to comprehensively understand consumers' decision-making processes with respect to their eco-friendly apparel purchase behavior. The specific objectives of this study are as follows:

Objective 1: To describe and explore biospheric, altruistic, egoistic, and hedonic values of US consumers who engage in eco-friendly apparel purchasing behavior.

Objective 2: To describe and explore obligation-based intrinsic motivation and enjoyment-based intrinsic motivations of US consumers who engage in eco-friendly apparel purchasing behavior.

Objective 3: To investigate the direct relationship between value orientations and intrinsic motivations in eco-friendly apparel purchasing behavior.

Objective 3.1: To analyze the extent to which biospheric, altruistic, egoistic, and hedonic values are related to obligation-based intrinsic motivation in eco-friendly apparel purchasing behavior.

Objective 3.2. To examine the extent to which biospheric, altruistic, egoistic, and hedonic values are related to enjoyment-based intrinsic motivation in eco-friendly apparel purchasing behavior.

Objective 4: To investigate the relationship between environmental self-identity and intrinsic motivations in eco-friendly apparel purchasing behavior.

Objective 4.1: To test if individuals with a strong environmental self-identity feel moral obligation to make eco-friendly apparel purchases.

Objective 4.2: To examine if individuals with a strong environmental self-identity enjoy making eco-friendly apparel purchases.

Objective 5: To analyze the relationship between social norms and intrinsic motivations in eco-friendly apparel purchasing behavior.

Objective 5.1: To examine the relationship between descriptive norms and obligation-based intrinsic motivation in eco-friendly apparel purchasing behavior.

Objective 5.2: To test the relationship between descriptive norms and enjoyment-based intrinsic motivation in eco-friendly apparel purchasing behavior.

Objective 5.3: To scrutinize the relationship between injunctive norms and obligation-based intrinsic motivation in eco-friendly apparel purchasing behavior.

Objective 5.4: To scrutinize the relationship between injunctive norms and enjoyment-based intrinsic motivation in eco-friendly apparel purchasing behavior.

Objective 6: To investigate the relationship between intrinsic motivations and eco-friendly apparel purchasing behavior.

Objective 6-1: To examine the relationship between obligation-based intrinsic motivation and eco-friendly apparel purchasing behavior.

Objective 6-2: To test the relationship between enjoyment-based intrinsic motivation and eco-friendly apparel purchasing behavior.

Research Model

To date, researchers have tested either the full model or partial models of the Value-Belief-Norm (VBN) theory (Kaiser et al., 2005; Steg et al., 2011). However, few attempts have been made to extend the VBN model by adding predictors to capture a greater variance to explain green behavior (Choi et al., 2015). In addition, little research has investigated pro-environmental apparel purchasing behavior using VBN theory (Kim et al., 2015). Therefore, this study uses the extended VBN model that incorporates environmental self-identity and social

norms to better explain consumers' pro-environmental behavior in acquiring eco-friendly apparel. The extended VBN model includes the hedonic value orientation in addition to biospheric, altruistic, and egoistic values in the value system. This study also takes into account both paths of intrinsic motivations, obligation–based and enjoyment-based intrinsic motivation, to explore individuals' pro-environmental apparel consumption behavior. To validate proposing a conceptual model, this study postulates that individuals experiencing a sense of obligation and/or enjoyment through the purchase of eco-friendly apparel are influenced by the following: an awareness that specific environmental conditions have adverse consequences on things they value, including other human beings, other species, and the environment; an ascription of

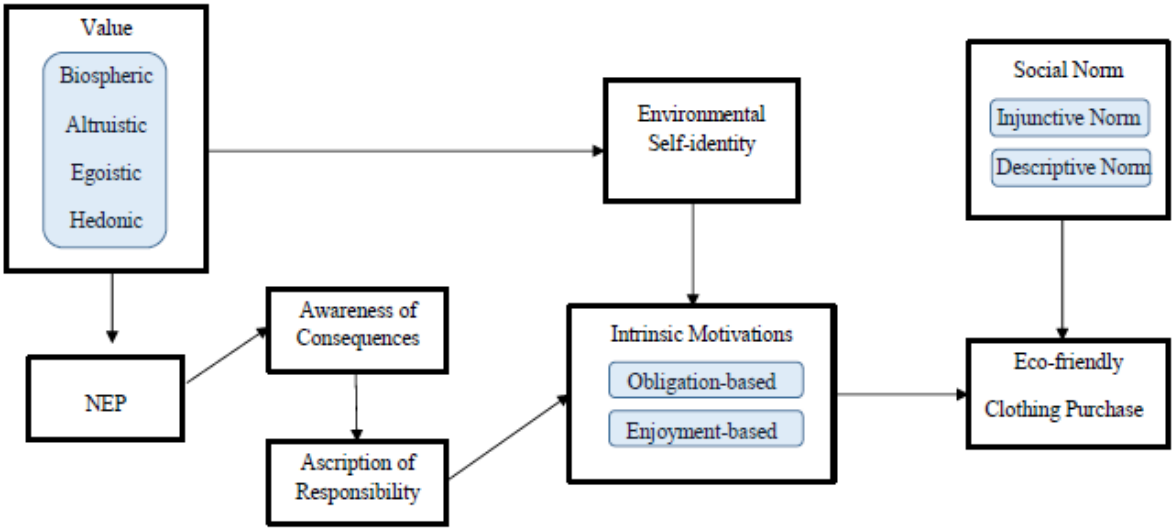

Figure 1. Original Research Model.

responsibility that an individual can act to reduce specific threat(s); and a strengthened environmental self-identity through values. This study also assumes that social norms, including descriptive norms and injunctive norms, influence an individual's intrinsic motivations in eco-friendly apparel purchasing behavior (See Figure 1).

An ample body of literature has previously validated the causal relationship among values, NEP, AC, AR, and intrinsic motivations (Chen, 2015; Han, 2015; Jakovcevic & Steg, 2013; Karatasou et al., 2014; Lind et al., 2015; Sahin, 2013; Saphores et al., 2012; Stern, 2000; Stern et al., 1999; Stern & Dietz, 1994; Tabi, 2013; Wynveen & Sutton, 2015; Wynveen, Wynveen, & Sutton, 2015; Zhang, Zhang, Zhang, & Cheng, 2014). Therefore, this study does not test these relationships. In addition, testing the original research model which includes 13 variables would require respondents to answer a total of 69 questions in a survey, which could

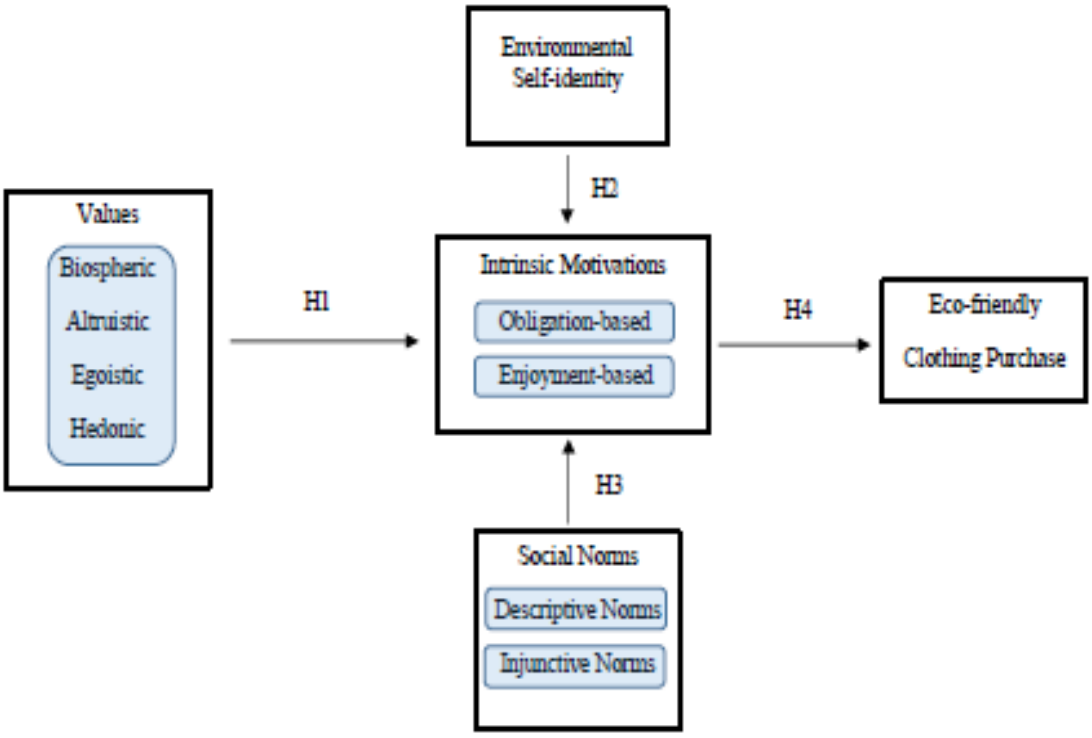

Figure 2. Research Model.

increase abandon rates and result in unengaged responses from the survey participants (Galesic & Bosnjak, 2009). Therefore, this study adopts a shorter version of the research model instead of the lengthy original research model in order to collect quality data and increase the participation rate in the study (see Figure 2).

This study specifically assumes the following in detail: first, eco-friendly apparel purchasing behaviors are a function of values, environmental self-identity, intrinsic motivations, and social norms; second, values are antecedent to intrinsic motivations; third, environmental self-identity influences intrinsic motivations; fourth, social norms are direct prerequisites of intrinsic motivations; and fifth, internal motivations influence eco-friendly apparel purchasing behavior.

Conceptual Definitions of Research Variables

This study uses the following conceptual definitions for each construct based on the literature review.

Value

A value is a desirable trans-situational goal that varies in importance and serves as a guiding principle in people's lives (Rokeach, 1973; Sagiv, Sverdlik, & Schwarz, 2011; Schwartz, 1992).

(1) Altruistic values: Values reflecting a concern with the welfare of other human beings (De Groot & Steg, 2008).

(2) Biospheric values: Values reflecting a concern with the quality of nature and the environment for its own sake (De Groot & Steg, 2008; Stern, Dietz, & Kalof, 1993).

(3) Egoistic values: Values that focus on costs and benefits of choices that influence the resources people have, such as wealth, power, and achievement (De Groot & Steg, 2008).

(4) Hedonic values: Values mainly focusing on an individual’s pleasure and comfort (Steg, Perlaviciute et al., 2014; Lind et al., 2015).

NEP (New Ecological Paradigm: the revised New Environmental Paradigm)

NEP refers to a measure of endorsement of a fundamental paradigm or worldview, as well as environmental attitudes, beliefs, and values (Dunlap, Van Liere, Mertig, & Jones, 2000).

Awareness of Consequences

Awareness of consequences means knowledge about the adverse environmental consequences of the specific behavior (Schwartz, 1977).

Ascription of Responsibility

Ascription of responsibility refers to a belief that one's own behavior is relevant to the problem or to the solution of the problem (Schwartz, 1977).

Eco-friendly Apparel

Eco-friendly apparel is clothing that is created with consideration of the environmental impact of the production process and, where possible, replacing harmful processes, chemicals, and products with less harmful or sustainable substitutes (Joergens, 2006).

Environmental Self-identity

Environmental self-identity is the extent to which an individual sees him-/herself as a person whose actions are environmentally-friendly (Steg, Perlaviciute et al., 2014).

Descriptive Norm

A descriptive norm is based on what people actually do and an individual's perception of the behavior of others (Aronson, Wilson, & Akert, 2010; White & Simption, 2013).

Injunctive Norm

An injunctive norm is based on what ought to be and involves an individual's perception of whether a behavior will be approved or disapproved by others (Aronson et al., 2010; White & Simpson, 2013).

Obligation-based Intrinsic Motivation

Obligation-based intrinsic motivation refers to the intrinsic motivation that compels individuals to perform pro-environmental behaviors because they believe it is right thing to do (Schwartz & Howard, 1981, p. 191).

Enjoyment-based Intrinsic Motivation

Enjoyment-based intrinsic motivation means intrinsic motivation that compels individuals to perform pro-environmental behaviors because they enjoy doing so (Steg, Perlaviciute et al., 2014).

CHAPTER 2

THEORETICAL BACKGROUND

This chapter provides an overview of literature related to the environmental impacts of textile and apparel and introduces relevant theories that are associated with approaching the research objectives. Five background theories that are the backbone of this study are reviewed, namely value theory, norm-activation model (NAM), value-belief-norm theory (VBN), identity theory, and well-being theory.

Environmental Impacts of Textile and Apparel

U.S. clothing retail sales were 244.5 billion dollars in 2013, up by 36.6 percent since 2003 (U.S. Census Bureau, 2015). Total U.S. textiles and apparel imports from other countries were 107.5 billion dollars in 2014, an increase of 9.24 percent since 2013, with 39 percent of total imports from China (Office of Textiles and Apparel, 2015) and 97 percent of apparel sold in the USA imported from other countries (American Apparel and Footwear Association, 2015).

When the term "environmentally responsible" is applied to textile and apparel products, it refers to the methods of manufacture, usage, maintenance, and ultimate disposal of fibers, fabrics, or apparel that have negative impacts on the environment (Chen & Burns, 2006), including the use of energy, water, and toxic chemicals, as well as the disposal of chemicals and wastes (Dickson et al., 2009). Thus, apparel consumption has both direct and indirect effects on the environment.

Indirect Environmental Effects of Apparel Consumption

The textile and apparel industry has been criticized for being one of the world's worst environment polluters, second only to agriculture (Kant, 2012; Khandare & Govindwar, 2015). Manufacturing processes, the first stage of textile and apparel products, occur with both natural and manmade raw materials. Associated with producing raw materials and manufacturing products, the textile and apparel industry contributes negatively to the environment, consequently threatening the well-being of humans and other species and interfering with the structure of the environment. In addition, the increasing demand for apparel products and the amount of textiles required to meet that demand create waste in addition to water pollution. The main environmental impacts and risks created by the textile and apparel industry include: use of raw materials, chemicals, and processes that can contaminate surface and groundwater when discharge is poorly treated or uncontrolled; use of processes such as bleaching, mercerizing, dyeing, printing, and mothproofing with chemical substances that can potentially affect employees, consumers, and the environment; emission of solid and liquid wastes containing salts, oil, ink, volatile organic compounds, and other materials requiring specialized handling and disposal; emission of air pollutants from drying, printing, fabric preparation, finishing processes, and wastewater treatment residues; use of large amounts of water during wet processing of textiles; and use of large amounts of energy (International Finance Corporation [IFC], 2014).

According to the World Bank, 17-20 percent of industrial water pollution comes from textile wet processing, including textile dyeing, printing, and finishing to generate colors, patterns, and special performance characteristics. Seventy-two toxic chemicals in water come solely from textile dyeing, 30 of which cannot be removed (cited in Kant, 2012). Large textiles

facilities in China, Mexico, and Indonesia that are major exporters of textiles and apparel to the USA discharge hazardous pollutants directly into rivers (Greenpeace, 2014a, 2014b).

Through investigations, Greenpeace (2014a) detected many hazardous chemicals, such as Nonylphenol Ethoxylates, Phthalate, and Antimony, in children's clothing and footwear across a number of major clothing brands, including fast fashion, sportswear, and luxury brands as well as adults' outdoor and active clothing. In the context of the global textiles industry, the greatest amount of hazardous chemical emissions takes place in developing countries where the suppliers manufacture textiles and clothes. Inevitably, clothing products that contain hazardous chemicals will release these harmful substances after the consumers' purchase, particularly when washed or discarded (Greenpeace, 2014b: IFC, 2014).

Many consumers perceive that cotton is more environmentally friendly than synthetic fibers because it is a natural cellulosic fiber, a renewable resource, and is intrinsically biodegradable. Cotton plants, however, are particularly prone to attack by certain insects and fungi; thereby, the growth of conventional cottons demands heavy use of pesticides, fungicides, and herbicides that cause pollution to the air, water, and soil as well as pesticide-induced death (Zhang, Jiang, & Ou, 2011; Yates, 1994). The United States is the predominant user of pesticides, insecticides, and herbicides, as well as the largest user of water for cotton production (Yates, 1994). It can take 2,700 liters of water to produce a single-cotton t-shirt (World Wildlife Fund, 2013). Despite its natural image, cotton production has become increasingly associated with severe impacts on the environment (Chen & Burns, 2006). Therefore, the negative environmental effects caused by fiber production for textiles and apparel manufacturing are indirect environmental effects of apparel consumption (Hiller Connell, 2011).

Direct Environmental Effects of Apparel Consumption

Apparel consumption creates direct environmental effects by releasing harmful pollutants into the environment, using energy, and generating solid waste during consumers' use, care, and discarding of apparel. In fact, washing and drying clothing at home requires water, fuel, and detergents that contain a variety of potentially toxic chemicals (Azizullah, Richter, Jamil, & Häder, 2012; Goel & Kaur, 2012). Furthermore, many environmentally hazardous chemicals, such as perchlorethylene, are involved with dry cleaning processes (Environmental Protection Agency [EPA], 2012). Thus, clothing use and care may result in more environmental harms than any other product life cycle (Allwood, Laursen, Malvido de Rodríguez, & Bocken, 2006)

Apparel consumption generates solid waste through raw material waste, packaging and labels, and discarded products. The United States EPA (2015) reported that the total municipal waste (MSW) generation in 2013 was 254.11 million tons. The total MSW recycling in 2013 was almost 87.18 million tons and 166.93 million tons were discarded. An estimated 15.13 million tons of textiles were generated in 2013, accounting for approximately six percent of the total MSW generation. However, the total textile recovery was 2.3 million tons, a mere 15.5 percent (EPA, 2015). Textile waste is categorized under municipal solid waste, which is not classified as a hazardous waste that is dangerous or potentially harmful to human beings' health and the environment. However, because many toxic chemicals applied during textile dyeing and treatment remain on apparel products, they can be released into the environment from the products directly during disposal, causing negative long-term environmental consequences and health risks (Chen & Burns, 2006; Greenpeace, 2014a).

The Value Theory

Values that emerge from interaction with culture and society (Stern, 2000; Stern & Dietz, 1994) are "desirable trans-situational goals varying in importance and serve as a guiding principle in people's lives" (Schwartz, 1994, p. 21). Some values conflict with one another (e.g., universalism and power), whereas others are compatible (e.g., self-direction and unidealism). In addition, the priorities or hierarchies of personal values are different in that individuals place more weight on relatively important values (Schwartz, 1994, 2012).

The value theory adopts a conception of values with six main features (Schwartz, 1994, 2006, 2012). The first characteristic embraces that values are beliefs linked with feeling. When a certain condition threatens the value someone has endorsed, that value is activated alongside the feeling. If they are helpless to protect it, they are miserable. However, they are happy when promoting it, which in turn guides human actions (De Groot & Steg, 2008). Second, values refer to desirable goals that influence action. People who value the well-being of others as an important value are motivated to achieve self-transcendence goals. Third, values surpass specific actions and situations because they are abstract and distal. This feature distinguishes values from narrower concepts like norms and attitudes that usually take into consideration specific actions, objects, or situations (De Groot & Steg, 2008; Feather, 1995; Rokeach, 1973; Stern 2000; Thøgersen & Ölander, 2002). Fourth, values guide the selection or evaluation of actions, objects, or events. People decide what is good or not good based on possible consequences for their endorsed values (De Groot & Steg, 2008). Fifth, values are in hierarchical order: the most prominent value among multiple values influences how people want to see themselves and affects their attitudes, norms, intentions, and behaviors (Feather, 1995; Jakovcevic & Steg, 2013; Steg, Bolderdijk, Keizer, & Perlaviciute, 2014). Finally, any attitude or behavior is involved with

more than one value. Values influence action when they are relevant to the context and important to an individual (De Groot & Steg, 2008; Schwartz, 1992, 2012). Values accordingly play a significant role in explaining specific beliefs, attitudes, and behavior and can be used as influencing factors for various variables such as beliefs and intentions to act in an environmental domain (De Groot & Steg, 2008; Stern, 2000; Stern & Dietz, 1994).

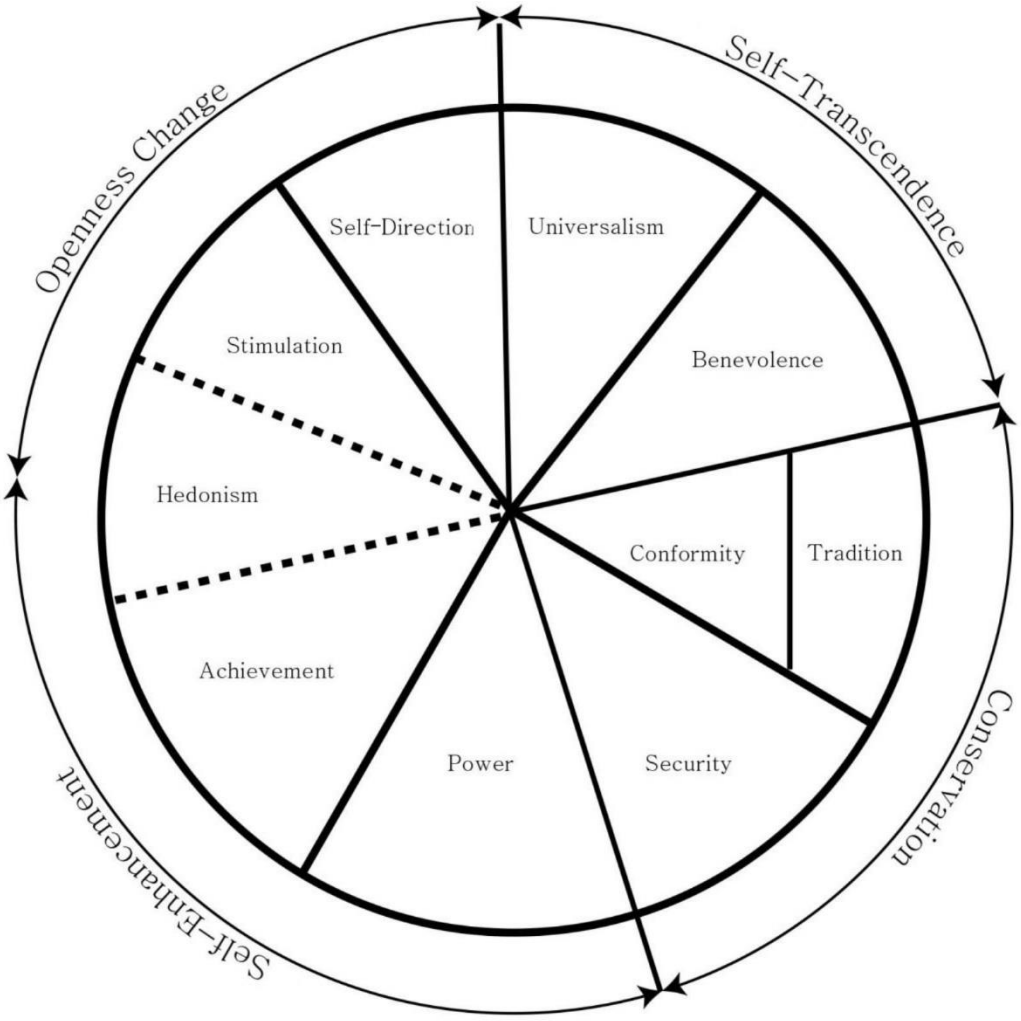

Figure 3. Schwartz's Value Inventory (1994)

Value Orientations in Environmental Research

Schwartz developed the value inventory through cross-national research that grouped 56 human values into 10 motivational domains: universalism, self-direction, stimulation, hedonism,

achievement, power, security, conformity, tradition, and benevolence (See Figure 3; Schwartz, 1992, 1994, 2006; Schwartz & Bilsky, 1990). Schwartz (1994) noted that these values were grounded in universal requirements that are "needs of individuals' biological organism, requisites of coordinated social interaction, and survival and welfare needs of groups" (p. 21) and defined as follows. Power refers to valuing an individual's social status and prestige and dominance over people and resources both within and across cultures. Achievement reflects personal success through displaying competence in relation to social standards. Individuals who value hedonism seek pleasure, enjoy life, and are self-indulgent. Individuals who value stimulation derive pleasure from excitement, variety, novelty, and challenges in life to maintain an optimal and positive level of activation. Self-direction reflects an individual's independent thought and actions of choosing, creating, and exploring. Universalism is concerned with understanding, appreciating, tolerating, and protecting the welfare of all people and nature beyond the extended primary group. Meanwhile, benevolence is a value that is concerned with preserving and enhancing the welfare of others that are close in everyday interaction, such as relatives, neighbors, and friends. Individuals who value tradition attach great importance to respect, commitment, and acceptance of the customs and ideas that are provided by culture and religion. The goal of conformity is to refrain from actions, inclinations, and impulses that are likely to harm social norms. Finally, security focuses on safety, harmony, and stability of relationships in society.

Schwartz (1994) then organized these ten value domains into two dimensional higher order structures comprised of opposite, competing values: self-enhancement versus self-transcendence and openness to change versus conservation. The self-enhancement versus self-transcendence dimension captures the conflict between self-enhancement values (power and

achievement) and self-transcendent values (universalism and benevolence). The openness to change versus conservation dimension captures the conflict between change (simulation and self-direction) and conservation of the current state of affairs (conformity, tradition, and security). Schwartz (1992, 1994) hypothesized and tested that all 56 items, recognized in lists of specific values from various cultures and nations, can be distinguished into one of these ten motivationally distinct types of values. The validity of the ten motivational value types and value structure was provided through his study using a total of 97 samples collected from 44 countries on different continents (Schwartz, 1992, 1994). Studies suggest that environmentally friendly attitudes and behavior are influenced by self-transcendent values (Nordlund & Garvill, 2002; Schultz & Zelezny, 1999; Stern & Dietz, 1994; Thøgersen & Ölander, 2002).

Norm Activation Model (NAM)

NAM postulates that people take action when pro-social or altruistic personal norms are activated and internalized by the belief that not helping has adverse consequences for other human beings and that these pro-social or altruistic norms are the direct determinants of pro-social behavior (Schwartz, 1973, 1977, 1994). The main variables of NAM are: awareness of consequences (AC), defined as the awareness of negative consequences for the welfare of others or of other things that an individual endorses when not acting pro-socially; ascription of responsibility (AR), described as the responsibility an individual ascribes to himself/herself in order to be protected from the negative consequences of not performing pro-social behaviors; and personal norms (PN), defined as internalized moral obligations to perform or refrain from specific actions (Schwartz, 1973, 1994, 2012; Schwartz & Howard, 1981). According to NAM (Schwartz, 1970, 1973), personal norms pertinent to pro-social helping require that the individual is aware of the negative consequences of not acting for the welfare of others, holds personal

norms relevant to these consequences, and ascribes responsibility to himself or herself to prevent adverse consequences or ameliorate responsibility for others. The activation of personal norms varies with the salience of consequences and personal responsibility (Schwartz, 1973). Behaving in line with personal norms results in pride, enhanced self-esteem, and security whereas anticipated or actual violation of opposing personal norms results in guilt, self-depression, and loss of self-esteem (Schwartz, 1973). The NAM has been successfully adopted in explaining various pro-social behaviors, such as donating blood (De Groot & Steg, 2009; Zuckerman & Reis, 1978). Additionally, there has been an increasing body of knowledge on the use of Schwartz's NAM to explain pro-environmental behaviors such as yard burning (Van Liere & Dunlap, 1978), energy conservation (Black, Stern, & Elworth, 1985; Steg et al., 2005; van der Werff & Steg, 2015; Zhang, Wang, & Zhou, 2013), recycling (Guagnano, Stern, & Dietz, 1995; Hopper & Nielsen, 1991; Matthies, Selge, & Klöckner, 2012; Thøgersen, 2006; Thøgersen & Ölander, 2002), and pro-environmental buying (Thøgersen, 1999). Pro-environmentalism is considered to be pro-social behavior because it leads to the welfare of others while often not providing direct benefits for the individual engaging in this behavior (De Groot & Steg, 2009; Steg & De Groot, 2010).

Schwartz's (1973) NAM has been used in many studies to explore pro-social and pro-environmental intention and behavior through two common interpretations of the NAM: NAM as a mediator and NAM as a moderator (De Groot & Steg, 2009). Researchers applied a mediator model to postulate that awareness of consequences (AC) and ascription of responsibility (AR) are mediated by personal norms (PN) on intentions and behaviors (De Groot & Steg, 2009; Steg & De Groot, 2010; Steg et al., 2005; Stern, 2000; Stern & Dietz, 1994). However, other researchers adopted a moderator model to hypothesize that the relationship between PN and pro-

social or pro-environmental intentions and behaviors is moderated by AC and AR (De Groot & Steg, 2009; Schultz & Zelezny, 1998). De Groot and Steg (2009) compared the NAM as a moderator model and NAM as a mediator model in a series of five studies in order to evaluate the relative predictive strength of pro-social and pro-environmental intentions and behaviors and found more consistent support for the mediator model. Therefore, this study will adopt NAM as a mediator in order to explain consumers' eco-friendly apparel purchasing behavior.

Value-Belief-Norm (VBN) Theory

The VBN theory pertains to environmentally significant individual behavior based on the value theory (Schwartz, 1992, 1994), Norm Activation Model (NAM) (Schwartz, 1994; Schwartz & Howard, 1981), and the New Ecological Paradigm (NEP) (Dunlap et al., 2000). It posits that personal values are the first link in a causal chain affecting NEP, awareness of the negative consequences of behavior, and ascription of individual responsibility for those consequences,

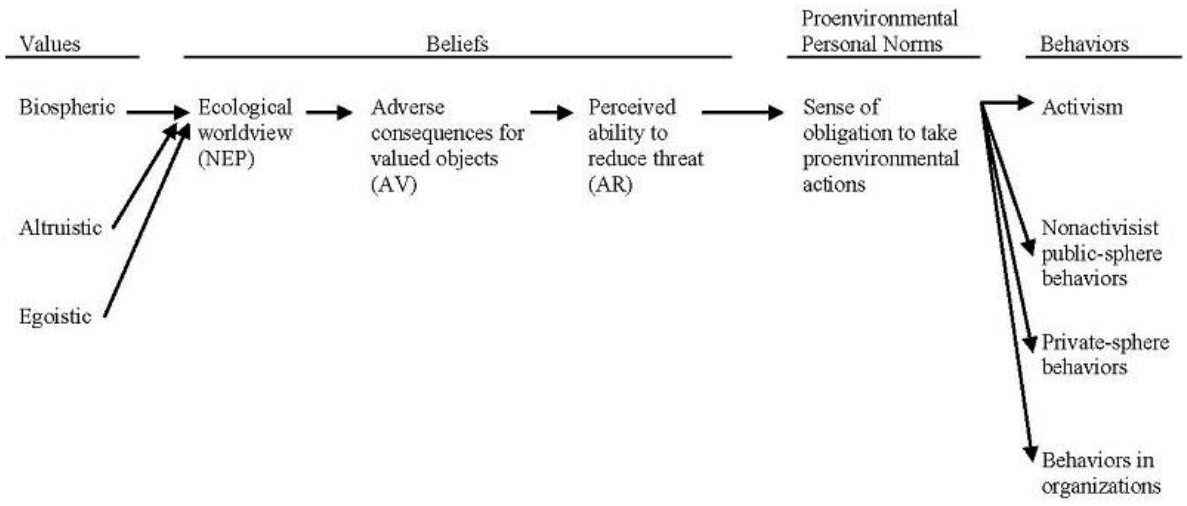

Figure 4. Value-Belief-Norm Model Adopted from Stern (2000).

thus activating personal norms that lead to environmental action (See Figure 4) (Stern, 2000; Stern et al., 1999; Stern & Dietz, 1994). It means that the sense of obligation to take pro-environmental actions is experienced due to the belief that environmental conditions threaten valued objects (AC) and that the individual feels responsible for acting to reduce the threat. To date, the VBN theory, along with the theory of planned behavior (TPB), has proven to be one of the best theories to explain consumers' pro-environmental behavior (Stern, 2000; Stern et al., 1999). Many studies have provided evidence that personal values, beliefs, and personal norms contribute to an explanation of pro-environmental behaviors in various areas, including in the marine context (Wynveen & Sutton, 2015; Wynveen et al., 2015); travel (Han, 2015; Jakovcevic & Steg, 2013; Lind et al., 2015; Zhang et al., 2014); climate change (Chen, 2015; Tabi, 2013); energy conservation (Karatasou et al., 2014; Sahin, 2013); and recycling (Aguilar-Luzón, García-Martínez, Calvo-Salguero, & Salinas, 2012; Saphores et al., 2012). It is apparent that the VBN theory could serve as an important theoretical basis to explore consumers' eco-friendly apparel purchasing behavior in this study.

Identity Theory

Over the past few decades, the concept of identity has been one of the most important topics in social psychology (Burke & Stets, 2009; Owens, Robinson, & Smith-Lovin, 2010; Serpe & Stryker, 2011; Stets & Serpe, 2013). Self is the foundation for a sociological concept of personality or is sociologically most relevant as an interpersonal and trans-situational phenomenon. Thus self is regarded as the reflective product of society (Stryker & Serpe, 1982). Identity describes a shared set of meanings and expectations that are an individual's particular role in society as a member of specific groups (e.g., "who I am") and as a person having specific characteristics that make him or her unique from others (e.g., "what I do") (Stets & Serpe, 2013).

Thus, people have many different identities (Burke & Stets, 2009; Stryker & Serpe, 1994). For example, a man may believe himself to be principled when he thinks about how ethical he is, diligent when he thinks of himself as a graduate student, and proactive when he thinks of himself as a member of the parent-teacher organization (PTO) at his son's school. "Ethical", "diligent", and "proactive" are the meanings that help define him in his ethical personal identity, student role identity, and PTO group identity, all of which make up his self. Therefore, identities guide and organize an individual's place in an interaction, lead action, facilitate the development of stable social relationships, and make interaction possible in the context of social structure (McCall & Simmons, 1978; Stets & Serpe, 2013).

Commitment has two aspects in identity (Stryker & Serpe, 1982, 1994). The first is quantitative, which is defined as the number of persons to whom one is tied through an identity. The more people hold on to an identity, the more likely it is that the identity will be activated in a certain situation. The second aspect of commitment is qualitative, which measures the relative extensiveness and intensity of relations with others in everyday life and is a function of participation in certain activities. The more extensive and intensive the relations with others are, the greater the commitment is to a specific role. Commitment is viewed within identity as central to the development of identity salience (Stryker & Serpe, 1982) and thus plays a primary causal role in the development of the relationships specified by the theory (Stryker & Serpe, 1982).

Identity salience refers to hierarchically organized identities and is understood by the full range of probabilities being brought into play in a given situation or series of situations (McCall & Simmons, 1978; Stryker, 1980: Stryker & Burke, 2000; Stryker & Serpe, 1982, 1994). The identity in a salient hierarchical position will affect its threshold to be invoked in a given situation and thus the likelihood that the behavior called for by the identity will increase. The

activation of self-identity leads to self-verification, which is the cognitive process of seeing the self in terms of the role embodied in the identity standard (Burke, 1991; Burke & Cast, 1997; McCall & Simmons, 1978). When an identity is activated, self-verification occurs. Thus, the person behaves to maintain his or her situationally manifested identity close to the expectations and meanings given in the standard (Burke, 1991; Burke & Reitzes, 1991; Swarm, 1983). If the person performs well in the role, his or her self-esteem and self-efficacy will be increased (Burke & Stets, 1999; Franks & Marolla, 1976).

Well-being Theory

The majority of people tend to believe that they live for their ultimate happiness and quality of life (Brülde, 2007). Most modern discussion of humans' well-being is based on Parfit's (1984) classification of good life, which distinguished three theories of self-interest on the good life. Those three theories are hedonic theories, desire-fulfillment theories, and objective list theories. According to Parfit, the hedonistic theories describe anything that makes an individual happy; the desire-fulfillment theories describe anything that would best fulfill the individual's intrinsic desire; and the objective list theories describe that some things are good or bad for the individual, despite his or her opinion. Aside from happiness, examples of those objective lists are knowledge, contact with reality, friendship, love, personal development, meaningful work, and rational activity (Brülde, 2007; Griffin, 1986).

Brülde (2007) summarized philosophers' definitions of the good life through three aspects: First, for a certain life to be good, it is to be evaluated in a positive way; second, it is to be relevant to a principle of guiding value, meaning that when people talk about a good life, it does not mean that their lives are morally good, aesthetically good, or good for others, but good

for themselves; and third, the principle relevant to value should be the final value as ends rather than means.

Later, Waterman and his colleagues distinguished two concepts of happiness, namely hedonic enjoyment and Eudaimonia, for the understanding of intrinsic motivation (Waterman, Schwartz, & Conti, 2008). Hedonic enjoyment is defined as the positive feelings associated with getting material objects that one wishes to possess and behavior that one wishes to experience (Deci & Ryan, 2001, 2008; Kraut, 1979; Waterman et al., 2008). Eudiamonia refers to the subjective experiences associated with doing what is worth doing and having what is worth having (Deci & Ryan, 2008; Norton, 1976; Telfer, 1980; Waterman et al., 2008). Eudaimondia proposes that the goal of human function is to act and live consistently with an individual's true self, which represents his/her best potentials or self-realization. Acting to advance or realize those life goals and personal potentials is held to be what is worth doing and worth having (Norton, 1976). Therefore, an individual's intrinsically motivated activities should bring not only hedonic enjoyment but also eudaimonia linked to (a) a balance of challenges and skills, (b) perceptions that they include the development of an individual's best potentials, (c) the willingness to invest considerable effort in their performance, and (d) the belief that they are important (Waterman et al., 2008).

According to Waterman and his colleagues, if an individual experiences eudaimonic living, he or she will experience hedonic enjoyment. So eudaimonia has been considered a sufficient, but not a necessary, condition for hedonic enjoyment (Telfer, 1980; Waterman et al., 2008). However, some activities are motivated by hedonic enjoyment alone. For example, a person may enjoy both cycling to work instead of using a car and enjoying a fine dinner at a luxurious restaurant. Both activities are related with positive feelings and enjoyment for the sake

of him-/herself. However, cycling to work within a decent distance and going up and down hills is more likely to involve actualizing both the individual's athletic potentials and environmental self. Therefore, cycling to work is more likely to give both hedonic enjoyment and eudaimonia, whereas having a fine meal at the luxurious restaurant is more likely to only be a hedonically enjoyed experience. Intrinsically motivated activities are not only enjoyed, but also related to four variables: (a) a balance of challenges and skills, (b) perceptions of developing an individual's best potentials, (c) the willingness to invest considerable effort in their performance, and (d) the belief that he/she is important (Waterman et al., 2008).

CHAPTER 3

LITERATURE REVIEW

This chapter reviews the research background for examining the effects of values, environmental self-identity, social norms, and intrinsic motivations on consumers' eco-friendly apparel purchasing behavior. Then, this chapter proposes the hypotheses for the research model.

Pro-environmental Apparel Purchasing Behavior

Stern (1997) proposed the following definition of consumption to define consumers' environmentally significant behavior in his study:

> Consumption consists of human and human-induced transformations of materials and energy. Consumption is environmentally important to the extent that it makes materials or energy less available for future use, moves a biophysical system toward a different state or, through its effects on those systems, threatens human health, welfare, or other things people value (p. 20).

Based on Stern's (1997) definition of consumption, pro-environmental consumption behavior refers to the extent to which individuals' choices and actions toward products and services lessen environmental impacts, lessen the change of available materials or energy in the environment, or alter the structure of ecosystems or the biosphere itself (Stern, 1997: Stern, 2000). Some behaviors, such as buying eco-friendly apparel or recycling clothing, can be pro-environmental behavior because those behaviors directly or indirectly effect the environment.

Apparel consumption refers to acquiring, storing, using, caring for, and discarding clothing (Hiller Connell, 2011; Kozar & Hiller Connell, 2015). Throughout the apparel product

life cycle, every process from the manufacture of fibers to the disposal of garments impacts the environmental system. Some research has focused on environmental apparel acquisition behaviors to identify environmental apparel consumption (Hiller Connell, 2011). This study concentrates on apparel acquisition, which is an initial step in the process of environmental apparel consumption.

Evidence in the literature suggests that consumers who understand how apparel products negatively impact the environment tend to engage in environmental apparel acquisition (Hustvedt & Dickson, 2009; Stephens, 1985). For example, in a study of consumers' environmental apparel purchasing behavior, Stephens (1985) found that environmentally conscious consumers tend to reduce clothing waste by purchasing second-hand or classic styles of clothing and recycling clothing. In addition, consumers who are more aware of the negative impact that apparel has on the environment consider the organic content in their apparel acquisition decisions and have more positive attitudes toward purchasing organic cotton clothing when compared to environmentally indifferent apparel consumers (Hustvedt & Dickson, 2009). More recently, through semi-structured interviews with a sample of 26 U.S. consumers, Hiller Connell (2011) found that participants exhibited their pro-environmental engagement in apparel acquisition through need-based and long lasting item purchasing, acquiring apparel made from environmentally friendly materials, and acquiring apparel from environmentally preferable sources, such as second-hand sources and environmentally conscious companies or brands.

In this dissertation, eco-friendly apparel purchasing behavior is defined as proactive choices toward purchasing apparel produced in an environmentally friendly manner because it is part of a broader consumption picture. Shaw and Newholm (2002) argue that ethical consumers who address social and environmental issues are concerned with consumption levels, so they

would choose alternative consumption methods rather than necessarily oppose or deny consumption (Szmigin & Carrigan, 2006). These alternative consumption behaviors provide not only moral rewards, but also sensual enjoyment (Bly, Gwozdz, & Reisch, 2015; Soper, 2007).

Values

It is assumed that individuals hold a relatively stable set of values that is internalized during their early life stages and is only minimally changed later (Schwartz, 1992, 1994; Thøgersen & Ölander, 2002). Empirical studies using the Schwartz value survey have confirmed that environmental behavior is related to certain values (De Groot & Steg, 2007, 2008, 2010; Lind et al., 2015; Schultz & Zenlzny, 1999; Steg, Perlaviciute et al., 2014; Stern & Dietz, 1994; Stern et al., 1993; Thøgersen & Ölander, 2002). For example, self-transcendent values (Nordlund & Garvill, 2002; Stern & Dietz, 1994), especially those in the universalism category (Schultz & Zelezny, 1999; Thøgersen & Ölander, 2002), predict an individual's environmentally friendly attitudes and behaviors. Howell (2013) found that interviewees who were asked what they saw as important in the development of their low-carbon lifestyles tended to exhibit altruistic value orientations significantly more frequently than biospheric value orientations, even though they were both important to interviewees. In addition, Perlaviciute and Steg (2015) demonstrated that people with stronger biospheric values favored renewable energy more and nuclear energy less, whereas the opposite was found for people with stronger egoistic values.

In the initial adoption of Schwartz's value theory, Stern et al. (1993) postulated three value orientations relevant to consumers' environmental concerns: self-interest, altruism toward other human beings, and altruism toward other species and the biosphere. Later, Stern and Dietz (1994) argued that environmental concerns are based on the relative importance a person adheres to themselves, other people, or plants and animals, labeling those values as egoistic, social-

altruistic, and biospheric respectively. Some researchers have validated the evidence that those three values - egoistic, altruistic and biospheric - are related to environmental concern (De Groot & Steg, 2007, 2008, 2010; Schultz, 2001; Steg et al., 2005; Stern, 2000; Stern et al., 1998; Stern, Kalof, Dietz, & Guagnano, 1995).

De Groot and Steg (2007, 2008) developed measurement scales to explain the three value orientations influencing environmental attitudes, norms, and actions and demonstrated the reliability and validity of a value instrument that is distinctive for egoistic, altruistic, and biospheric value orientations using a total of 490 adults from five different European countries (Austria, Czech Republic, Italy, the Netherlands, and Sweden). In their study, De Groot and Steg (2008) found that both altruistic and biospheric value orientations are positively related to intentions to donate to humanitarian or environmental organizations. When people are conflicted in their choice between altruistic and biospheric goals, people with an altruistic value orientation show a stronger intention to donate to humanitarian organizations than environmental organizations. Alternatively, those with a biospheric value orientation display the opposite inclination (De Groot & Steg, 2008). The three value orientations (egoistic, altruistic, and biospheric) have been adopted broadly to explore the relationship between values, self-identity, attitude, and behavior in the environmental domain (De Greet & Steg, 2010; Dermody et al., 2015; Gatersleben, Murtagh, & Abrahamse, 2014; van der Werff et al., 2013a, 2013b; Whitmarsh & O'Neill, 2010).

Meanwhile, Thøgersen and Ölander (2002) argued that Stern and his colleagues (Stern et al., 1993; Stern et al., 1995) used a short version of the Schwartz value inventory and did not include some of the motivational value types, including hedonism and benevolence, that are important antecedents of pro-environmental behaviors. Furthermore, some recent studies have

suggested that hedonic values could be empirically distinguished from egoistic, altruistic, and biospheric values, demonstrating that hedonic values are one of the antecedents of environmental beliefs and behaviors (Lind et al., 2015; Steg, Perlaviciute et al., 2014). Therefore, this study includes hedonic values in the value orientations to explain consumers' eco-friendly apparel purchasing behavior.

Biospheric values. Biospheric values reflect concerns for non-human species, namely plants and animals, and the conservation of the planet in general (De Groot & Steg, 2007, 2008; Stern & Dietz, 1994). Studies have shown evidence that biospheric values are strongly and positively related to environmental beliefs, intentions, and behaviors (Perlaviciute & Steg, 2015; Steg et al., 2005: van der Werff et al., 2013b). The stronger their biospheric values, the more people favored renewable energy and the less they favored nuclear energy (Perlaviciute & Steg, 2015).

Egoistic values. Egoistic values reflect an interest in trying to maximize individual outcomes to self-matter, such as social power, wealth, authority, and influence (De Groot & Steg, 2008). Egoistic values are typically related negatively to environmental beliefs, attitudes, preferences, and behaviors (De Groot & Steg, 2008, 2010; Honkanen & Verplanken, 2004; Nordlund & Garvill, 2002; Schultz & Zelezny, 1998; Steg et al., 2005, 2011; Stern et al., 1995), suggesting that individuals who care more about personal gains are less likely to be concerned with the environment. A study of the influence of values on evaluations of energy alternatives revealed that those with stronger egoistic values were more likely to favor nuclear energy and less likely to favor renewable energy (Perlaviciute & Steg, 2015).

Altruistic values. Altruistic values reflect an appreciation for social justice and the welfare of other human beings (Stern et al., 1993). Altruistic values are generally positively

related to pro-environmental beliefs, attitudes, preferences, and behaviors (De Groot & Steg, 2008, 2010; Honkanen & Verplanken, 2004; Nordlund & Garvill, 2002; Schultz & Zelezny, 1998; Steg et al., 2005, 2011; Stern, Kalof et al., 1995).

Hedonic values. Hedonic values' key concerns focus on improving one's feelings and reducing efforts (Steg, Perlaviciute et al., 2014). Hedonic values are derived from organismic needs and the pleasure related to satisfying them. The defining goals of these hedonic values are pleasure or sensuous gratification (Lind et al., 2015; Schwartz, 1992; Steg, Perlaviciute et al., 2014). People with strong hedonic values generally intend to engage in hedonic aspects of behavior, such as purchasing tasty food and cycling to work (Steg, Perlaviciute et al., 2014), and shopping and playing computer games (Gatersleben, White, Abrahamse, Jackson, & Uzzell, 2010). According to Steg and her colleague, people with strong hedonic values are associated with longer showering times, a higher meat consumption, ownership of more motor vehicles, and leaving appliances on standby more often (Steg, Perlaviciute et al., 2014).

Values and Intrinsic Motivation

In the majority of literature that has adopted VBN theory to explain people's pro-environmental intentions or behaviors, researchers proposed and tested the direct relationship between values and beliefs and the indirect relationship between values and personal norms by causal chain relation through NEP, AC, and AR (Aguilar-Luzón et al., 2012; Chen, 2015; Han, 2015; Jakovcevic & Steg, 2013; Karatasou et al., 2014; Lind et al., 2015; Sahin, 2013; Saphores, Oguseitan, &Shapiro, 2012; Tabi, 2013; Wynveen & Sutton, 2015; Wynveen et al., 2015; Zhang et al., 2014). Only a few studies have tested the direct relationship between values and obligation-based intrinsic motivation. For example, biospheric values emerged as a significant antecedent of personal norms (Fornara, Pattitoni, Mura, & Strazzera, 2016; Steg et al., 2011).

Nordlund and Garvill (2002, 2003) found that there were positive and direct effects of self-transcendence values and eco-centrism on the personal norm to reduce personal car use. De Groot and Steg (2007) tested the direct causal effects of value orientations on personal norms across five different European countries (i.e., Austria, Czech Republic, Italy, the Netherland, and Sweden). They found that the biospheric value orientation made the strongest contribution to explaining personal norms in all five countries. The egoistic value orientation contributed significantly, but negatively, to the explanation of personal norms in Czech Republic and the Netherlands. However, the altruistic value orientation did not contribute significantly to the explanation of personal norms in all countries. In a more recent study, biospheric and altruistic value orientations statistically and positively influenced personal norms, but the egoistic value orientation negatively and statistically predicted the personal norms to prevent road-traffic noise (Lauper, Moser, Fischer, & Matthies, 2016).

Based on literature reviews, the roles of biospheric and egoistic value orientations toward personal norms of pro-environmental intentions and behaviors are consistent, but the role of the altruistic value orientation on pro-environmental personal norms is controversial. In terms of hedonic values, no study has investigated the relationship between hedonic values and intrinsic motivations. Previous studies show evidence that self-enhancement values are negatively related to environmentally friendly beliefs (Kalof, Dietz, Stern, & Guagnano, 1999; Klöckner, 2013; Nordlund & Garvill, 2002, 2003; Schultz et al., 2005; Steg, Bolderdijk et al., 2014). In addition, hedonic values are positively correlated with egoistic values, which are circumscribed by the higher concept category of the self-enhancement value (Steg, Bolderdijk et al., 2014). The value theory (Schwartz, 1977) and the well-being theory (Waterman, 1993; Waterman et al., 2008) suggest that people may get intrinsic satisfaction and experience eudaimonia from purchasing

eco-friendly clothing aligned with their own principal values and refrain from purchasing conventional and fast fashion apparel that may harm nature, wildlife, and other people. Therefore, this study proposes the following hypotheses:

H_1: Values significantly influence intrinsic motivation in eco-friendly apparel purchasing behavior.

$H_{1\text{-}1}$: Biospheric values positively influence obligation-based intrinsic motivation.

$H_{1\text{-}2}$: Biospheric values positively influence enjoyment-based intrinsic motivation.

$H_{1\text{-}3}$: Altruistic values positively influence obligation-based intrinsic motivation.

$H_{1\text{-}4}$: Altruistic values positively influence enjoyment-based intrinsic motivation.

$H_{1\text{-}5}$: Egoistic values negatively influence obligation-based intrinsic motivation.

$H_{1\text{-}6}$: Egoistic values negatively influence enjoyment-based intrinsic motivation.

$H_{1\text{-}7}$: Hedonic values negatively influence obligation-based intrinsic motivation.

$H_{1\text{-}8}$: Hedonic values negatively influence enjoyment-based intrinsic motivation.

Environmental Self-identity

A broad body of knowledge on human behavior has been established to identify psychosocial factors that determine individuals' decision-making processes based on the theory of planned behavior (TPB; Ajzen, 1991). The TPB has been successfully adopted to explore a range of apparel purchasing behavior (Jin & Kang, 2011; Kang & Kim, 2012; Manchiraju & Sadachar, 2014; Phau, Teah, & Chuah, 2015) and pro-environmental behaviors (Blok, Wesselink, Studynka, & Kemp, 2015; de Leeuw, Valois, Ajzen, & Schmidt, 2015; Ho, Liao, & Rosenthal, 2015; Mancha & Yoder, 2015). However, through a meta-analysis of 33 studies that utilized the TPB with a self-identity variable to understand people's behavior, Rise et al. (2010) showed that the inclusion of self-identity in the TPB significantly enhanced the predictive power

of behavioral intentions ($\Delta R^2 = .06$, $p < .001$) compared to using TPB only. Thus, the inclusion of self-identity as a predictor of intention and behavior can be clearly justified.

To understand who one is, what one believes, and what one does is an important factor in consumer behavior because one's consumption behavior is linked to the labels of the role and expectations in social contexts with which he or she is self-associated (Reed, Forehand, Puntoni, & Warlop, 2012). Identities describe social roles that require responsibilities (Clayton & Opotow, 2003). Self-identity refers to salient and enduring aspects of one's self-perception (Sparks, 2000). The connection between self-identity and behavior is based on identity theory, where self is reflected as a social construct in which a distinctive self-component represents each of the roles an individual occupies in different social settings (Stryker, 1980). The role is considered a set of expectations and standards that defines what constitutes role-appropriate behavior (Simon, 1992); engaging in role-congruent behavior is meant to validate a person's status in a role (Callero, 1985). For example, if a consumer views themselves as "an environmentally concerned citizen", they are likely to behave in ways that are consistent with what it means to "be" a pro-environmental citizen. This general drive produces a wide range of identity-driven behavioral attitudes and intentions or actions, including increased attention to identity-related stimuli (e.g., these consumers are more likely to notice and evaluate environmentally friendly products); a preference for identity-linked brands (e.g., Patagonia) and the selection of media related to the identity (e.g., the Discovery Channel over an entertainment channel or *Vogue* over an environmental magazine); more positive and active participation in organizing or volunteering linked to the identity (e.g., donation to and membership in a non-profit environmental organization); and the adoption of behaviors linked to an identity (using public transportation to commute, engaging in recycling, or voting for environment advocates).

Clayton (2003) defines environmental self-identity as a sense of connection to the non-human natural environment that affects the ways in which an individual perceives and acts toward the world. Thus, environmental self-identity is a belief that the natural environment is a critical part of who he/she is and offers a sense of connection to a group (Clayton, 2003; Schultz & Tabanico, 2007). Based on Clayton's definition of environmental self-identity, this study defines environmental self-identity as the extent to which people see themselves as an environmentally friendly person. A stronger environmental self-identity increases the likelihood of one engaging in pro-environmental behaviors because they may be motivated by the desire to avoid cognitive dissonance (Thøgersen, 2004).

A Gallup poll revealed that 42% of Americans considered themselves as environmentalist and 57% of Americans considered themselves not to be environmentalists in 2016. This poll is in stark contrasts to Americans' have positions on the issue in 1991, when 78% of Americans identified themselves as environmentalists and 20% did not (Gallup, 2016). However, according to the Gallup poll, 64% of U.S. adults say they are worried a "great deal" or "fair amount" about global warming, a proportion which is up from 55% in 2015 and is at its highest reading since 2008. More than half of the respondents in the Gallup poll in 2016 prioritized the protection of the environment, even if it meant there was a risk of curbing economic growth (56%) to promoting economic growth even if the environment suffers to some extent (37%). In other words, many environmentally sensitive actions that reduce household energy use, involve recycling, and buy environmentally friendly products are now commonplace.

Environmental Self-identity and Intrinsic Motivations

Many people hold the fundamental belief that they are related to the natural environment (Schultz & Tabanico, 2007). A sufficient body of literature on pro-environmental behavior

addresses the diversity of factors that influence different environmental behaviors, such as values, environmental concerns, and environmental self-identity (Bamberg & Schmidt, 2003; Jackson, 2005; Kollmuss & Agyeman, 2002; Nayum & Klöckner, 2014; Peters, Gutscher, & Scholz, 2011; Steg, Vlek, & Slotegraaf, 2001). Indeed, environmental self-identity is an important predictor of pro-environmental behavior. For example, people who see themselves as typical recyclers are more likely to recycle than those who do not perceive themselves as recyclers (Mannetti, Pierro, & Livi, 2004). Additionally, people who claim to have a green identity have strong intentions to purchase organic vegetables or foods (Dean, Raats, & Shepherd, 2012; Sparks & Shepherd, 1992). A final example is that people with a strong environmental self-identity are more likely to conserve energy, reduce waste, and eco-shop (Whitmarsh & O'Neill, 2010); are more likely to engage in pro-environmental behaviors, recycle, buy fair trade products, and refrain from flying to a holiday destination (Gatersleben, Murtagh, & Abrahamse, 2014); and are more likely to use less energy, use green energy, choose more sustainable products, and use paper more economically (van der Werff et al., 2013b; van der Werff, Steg, & Keizer, 2014). However, one question remains unclear: why do people with a strong environmental self-identity tend to act more environmentally friendly? To answer this question, van der Werff et al. (2013a) suggested two explanations: first, people who consider themselves to have an environmental self-identity may act pro-environmentally because they feel a sense of obligation to do so; second, people who consider themselves to have an environmental self-identity may act pro-environmentally because they enjoy doing so.

A few studies investigated the relationship between environmental self-identity and intrinsic motivation. Van der Werff et al. (2013a) performed two separate studies regarding the relationship between environmental self-identity and intrinsic motivation and found that people

with a strong environmental self-identity have a stronger obligation-based intrinsic motivation to use green energy and choose pro-environment products. Therefore, based on ven der Werff et al.'s (2013a) findings, this study anticipates that environmental self-identity will influence obligation-based intrinsic motivation for people to purchase eco-friendly apparel.

Various studies assert that many pro-environmental actions are related to more effort, less pleasure, and require more costs and sacrificing of comfort than standard actions (Steg, Perlaviciute et al., 2014; ven der Werff et al., 2013a). These studies relate pro-environmental actions only to pure hedonic enjoyment (Deci & Ryan, 2008; Waterman et al., 2008). However, enjoyment as an emotion tends to be strongly activated to the degree of self-approval (Lindenberg, 2001); thus, the self-concept that is the active representation of what individuals think, feel, or believe about themselves significantly influences behavior or affect (Brown, 1998; Jimenez, Niles, & Park, 2010; Markus & Wurf, 1987).

Unlike other pro-environmental behaviors, such as recycling and using public transportation for commuting to the workplace, eco-friendly apparel purchasing is an alternative form of consumption from which environmentally friendly consumers derive pleasure (Bly et al., 2015; Soper, 2007; Szmigin & Carrigan, 2006). Also, when acting in line with who they are, people have a strong reaction to self-approval and feel a sense of joy in doing so (Cerasoli, Nicklin, & Ford, 2014; Lindenberg, 2001). People with a strong environmental self-identity are more likely to be intrinsically motivated to perform behavior in line with that identity because they feel satisfaction in doing so (Lindenberg, 2001; Lindenberg & Steg, 2007; van der Werff et al., 2013a). The well-being theory (Deci & Ryan, 2008; Norton, 1976; Waterman, 1993: Waterman et al., 2008) also suggests that if an individual has a willingness to invest considerable effort in their environmental acts and the belief he or she is important as their true self, intrinsic

motivation of eudaimonia is activated. This reasoning suggests that an environmental self-identity will influence enjoyment-based intrinsic motivation for people to purchase eco-friendly apparel because acting on self-identity makes people feel good and enables them to maintain or enhance a positive self-concept and self-esteem (Lindenberg & Steg, 2007). Therefore, this study offers the following hypotheses:

H_2: Environmental self-identity significantly influences intrinsic motivation in eco-friendly apparel purchasing behavior.

$H_{2\text{-}1}$: Environmental self-identity positively influences obligation-based intrinsic motivations.

$H_{2\text{-}2}$: Environmental self-identity positively influences enjoyment-based intrinsic motivations.

Social Norm

People are greatly affected by the normative influences and the context of their daily lives. For example, the degree to which an individual's belief that a certain behavior contributes to the environment or global warming is likely associated with the belief that other people they deem as important also hold this belief. There is a general consensus that the social environment strongly influences people's intentions and actions (Abrahamse & Steg, 2013; Fishbein & Ajzen, 2011; Joshi & Rahman, 2015: Newell et al., 2014; Swim et al., 2011). Thus, the concept of social norms has been recognized as a key component of motivation and behavior and as a critical factor to behavioral influence and change (Reynolds et al., 2015; Smith, Louis, Terry, Greenaway, Clarke, & Cheng, 2012). Even so, the concept of social norms is still relatively underused within the environmental area (Griskevicius, Cialdini, & Goldsteing, 2008; Nolan,

Kenefick, & Schultz, 2011; Schultz, Messina, Tronu, Limas, Gupta, & Estrada, 2014) and not included in the VBN model.

Social norms refer to an individual's beliefs concerning how people should and do behave within a group (Cialdini & Trost, 1998). The concept of a social norm or subjective norm is one of the key variables in the theory of reasoned action (TRA) (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975) and theory of planned behavior (TPB) (Ajzen, 1991). Subjective norms (SN) are defined as "an individual's perception that most people who are important to her should (or should not) perform a particular behavior" (Fishbein & Ajzen, 2011, p. 131). Both theories assume that subjective norms play a critical role in shaping behavioral intentions, which in turn influence actual behavior.

Descriptive Norms and Injunctive Norms

Cialdini and his colleagues acknowledge that two different aspects related to "others'" concerns motivate human behavior in independent and interactive ways: descriptive norm information and injunctive norm information (Cialdini, Kallgren, & Reno, 1991; Cialdini et al., 1990; Göckeritz, Schultz, Rendón, Cialdini, Goldstein, & Griskevicius, 2010; Jacobson, Mortensen, & Cialdini, 2011; Peattie, 2010; White & Simpson, 2013). According to Cialdini et al. (1990), descriptive norms refer to the perception that most others are typically performing or not performing a given behavior. Descriptive norms are based on observations of how people behave in a given situation. Because what others commonly do in a given situation often suggests behavior that would be in one's immediate best interest, descriptive norms provide evidence of effective action and are adaptive to individuals, especially in ambiguous or uncertain situations (Göckeritz et al., 2010; Jacobson et al., 2011; Reno, Cialdini, & Kallgren, 1993). Injunctive norms, however, are described as perceptions regarding what should or ought to be

done in relation to performing a behavior and provide informal rules and standards concerning what is accepted or rejected under a certain culture (Cialdini et al., 1990; Cialdini & Trost, 1998). People tend to pursue social norms to gain social approval or to avoid social sanction so that other people will like them (Cialdini & Goldstein, 2004; Keizer & Schultz, 2012). Thus, injunctive norms stimulate a somewhat more effortful and motivationally complex form of psychological response than descriptive norms do (Jacobson et al., 2011).

In their recent book, Fishbein and Ajzen (2011) explained that the SN of their earlier work referred only to injunctive norms, which determine behavioral intention and, in turn, influence behavior because they act as social sanctions when performing a given behavior (Ajzen, 1991; Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975), and did not address what behaviors people of importance do or do not perform. However, in their later conceptualizations of the theory, Fishbein and Ajzen (2011) adopt the term "perceived norm" or "perceived social pressure", which refers to the overall normative influence derived from perceived descriptive and injunctive norms.

There is empirical evidence that suggests both descriptive and injunctive norm messages are relevant to pro-environmental behavioral decisions, including littering (Cialdini et al., 1990), saving energy (Allcott, 2011; Allcott & Rogers, 2012; Ayres, Raseman, & Shih, 2013; Dwyer, Maki, & Rothman, 2015; Schultz, Estrada, Schmitt, Sokoloski, & Silva-Send, 2015), recycling (Lapinski, Zhuang, Koh, & Shi, 2015; Matthies et al., 2012), and conserving the environment in hotels (Goldstein, Cialdini, & Griskevicius, 2008).

In cases where a behavior is common, descriptive norms are very effective at motivating similar behavior. In a study of empirical examinations of social normative influence on behavior in a real world situation using the traditional social norm approach, Goldstein et al. (2008)

examined the influence that informing guests of the descriptive norm that the majority of other guests actively participated in reusing their towels had on behavior. They questioned whether a descriptive norm would be more effective at encouraging towel reuse than the current industry's standard approach, which only highlights the importance of environmental protection without providing any explicit descriptive norm. The authors found that the descriptive condition yielded a significantly higher rate of towel reuse than the current industry's environmental protection message. Similar findings acquired using the personalized social norm approach were reported by Schultz et al. (2014): individuals provided with descriptive normative information about their neighborhood's water usage significantly decreased their own water consumption when compared to those given the control condition. Grønhøj and Thøgersen (2012) investigated the relationship between descriptive family norms and an adolescent's behavior in different domains of pro-environmental behaviors (energy saving, recycling, and green buying). They found that a descriptive norm (perceived parental behavior) was the most relevant predictor for the environmental behaviors of adolescents.

Even though there is clear evidence that both descriptive and injunctive norms make distinct contributions to pro-environmental behaviors, little attention has been given to how both descriptive and injunctive norms differently influence people's environmentally friendly clothing consumption behavior (Kim et al., 2012b). Peattie (2010) indicates that many studies tend to address the influence of descriptive norms on consumers' eco-friendly behaviors. But if there are specific ethical issues attached to those behaviors, the studies can focus on either descriptive or injunctive norms. For example, using data collected through self-reported ethical consumption behavior from students in Germany and the USA, Andorfer and Liebe (2013) investigated the relationship between injunctive norms and fair trade coffee consumption. Their results showed

evidence that injunctive norms had a significant positive influence on fair trade coffee consumption in both Germany and the USA.

Social Norms and Intrinsic Motivations

Schwartz (1977) and Schwartz and Howard (1981) proposed that perceived social norms influenced the formation of personal norms. Thøgersen (2006) proposed extended norm taxonomy and suggested that the more deeply a social norm is internalized and integrated into self or personal values and goals, the more that norm influences environmental behavior. In addition, Bamberg and Möser (2007) performed a meta-analysis of 46 studies on responsible environmental behavior and found that social norms had a significant influence on personal moral norms.

Based on Schwartz and his colleagues' suggestion, many authors have considered social norms as antecedents of personal norms and tested the relationship between the two variables (Klöckner & Blöbaum, 2010; Klöckner & Matthies, 2009; Lauper et al., 2016). For example, in a study (Klöckner & Blöbaum, 2010) using 389 student responses and a meta-analysis to develop a comprehensive model of the psychology of environmental behavior (Klöckner, 2013), social norms were found to have a statistically positive influence on personal norms. Nayum and Klöckner (2014) conducted a socio-psychological study using web survey data collected from 1793 respondents who own cars to explain consumers' purchase of fuel-efficient cars and found that personal norms were influenced by social norms. Using data collected from 1,002 car drivers in a two-wave longitudinal survey to examine car drivers' intentions to prevent road traffic noise, Lauper et al (2016) found that social norms (especially injunctive norms) were one of the major predictors of personal norms. Additionally, the influence of social norms on personal norms has been reported in various contexts, including environmental conservation (López-Mosquera,

García, & Barrena, 2014), tourism (Doran & Larsen, 2016; Ong & Musa, 2011), purchasing organic foods (Thøgersen & Ölander, 2006), and household recycling (Thøgersen, 2009).

If people engage in pro-social behaviors, including pro-environmental behaviors, due to direct or indirect personal benefits, such as social approval, their effect on eudaimonia diminishes (Hopper & Nielsen, 1991; Krishna, 2011; Meier & Stutzer, 2008; Venhoeven, Bolderdijk, & Steg, 2013). However, when social norms are internalized as (or translated into) intrinsic motivations, social behavior contributes to eudaimonia (Ryan & Deci, 2000; Schwartz, 1977; Thøgersen, 2006; Venhoeven et al.2013). Therefore, this study proposes the following hyphothesis:

H_3: Social norms significantly influence intrinsic motivations in eco-friendly apparel purchasing behaviors.

$H_{3\text{-}1}$: Descriptive norms positively and significantly influence obligation-based intrinsic motivations.

$H_{3\text{-}2}$: Descriptive norms positively and significantly influence enjoyment-based intrinsic motivations.

$H_{3\text{-}3}$: Injunctive norm positively and significantly influence obligation-based intrinsic motivations.

$H_{3\text{-}4}$: Injunctive norms positively and significantly influence enjoyment-based intrinsic motivations.

Intrinsic Motivation

The goal framing theory (Lindenberg & Steg, 2007) suggests that people's environmental behavior is governed by three different types of goals: hedonic, gain, and normative. This study does not elaborate on the gain perspective to govern environmental behavior, as the strategy of

gain goals addresses people's changes in their personal resources, such as money and status through external rewards. This study instead focuses on intrinsic motivation, including hedonic and normative goals, to explain why people engage in eco-friendly apparel purchasing behavior.

Intrinsic motivation describes a situation in which people do something because it is inherently interesting, enjoyable, or challenging (Deci & Ryan, 1985: Ryan & Deci, 2000). Lindenberg (2001) considers senses of obligation as intrinsic motivation, arguing that if people act based on a principle, they do not seek external rewards. Intrinsically motivated behaviors are themselves enjoyable, purposive, and provide sufficient reason to persist (Cerasoli et al., 2014). Van der Werff et al. (2013a) argued that there are two types of intrinsic motivation: obligation-based and enjoyment-based intrinsic motivation. According to Lindenberg (2001), cycling to work within a reasonable distance instead of driving a car is more likely related to enjoyment-based intrinsic motivation, whereas paying taxes or voting are more likely related to moral or obligation-based intrinsic motivation (Frey, 1997: Harsanyi, 1977); however, these behaviors may stimulate positive feelings due to them acting toward public causes (van der Werff et al., 2013a).

Wynveen and Sutton (2015) examined data collected from 324 Australian residents living near the Great Barrier Reef Marine Park to investigate the relationship between the sense of obligation to adopt pro-environmental behaviors and pro-environmental behaviors to protect coral reefs. They showed that people with a high sense of obligation engaged in climate change mitigation behaviors to protect the reef ecosystem through greater use of energy-efficient products and planting trees and plants. Saphores et al. (2012), through a 2006 national survey of 2136 U.S. households, also found that personal norms statistically had a positive influence on willingness to engage in e-waste recycling. To date, no empirical study has investigated the

relationship between hedonic-based intrinsic motivations and pro-environmental behaviors. Some studies have demonstrated that people are more prone to participate in pro-environmental behavior when they believe that acting pro-environmentally results in pleasure and satisfaction (De Groot & Steg, 2010; Koestner, Houlfort, Paquet, & Knight, 2001). Based on the above reasoning, this study assumes that purchasing eco-friendly apparel may not only be due to it being the right thing to do, but may also cause people to feel good about themselves by doing the right thing (Steg, Bolderdijk et al., 2014; Verplanken & Holland, 2002). Therefore, this study offers the following hypothesis:

H_4: Intrinsic motivations significantly influence eco-friendly apparel purchasing behavior.

Obligation-based Intrinsic Motivation

When people act based on a principle, they pursue intrinsic motivation rather than external rewards (Boudon, 1996; Kallgren, Reno, & Cialdini, 2000; Lindenberg, 2001). People sometimes behave based on the feeling that they must follow a particular rule or normative principle (Lindenberg, 2001). Frey (1997) has applied psychological research on intrinsic motivation toward the development of his economic theory of intrinsic motivation including tax systems. In this context, intrinsic motivations refer to the feelings of obligation (e.g., tax moral) that motivate an individual to act without being forced by others or being provided with monetary rewards to do so. In performing pro-environmental behaviors, people are motivated by the domain of morality in an individual's mind and guided by evaluations about what is right or wrong according to the self or others (Gorsuch & Ortberg, 1983; Lindenberg & Steg, 2007; Thøgersen, 1996).

Schwartz (1977) defines personal norms or moral norms as self-expectations, sanctions, and obligations that are rooted in internalized values in his NAM. According to the NAM, personal norms reflect internalized values and are experienced as moral obligations to engage in decision-making processes. Therefore, when they are active, personal norms influence altruistic behavioral intention and action (Schwartz, 1977). Similarly, the VBN theory (Stern et al., 1999; Stern, 2000) proposes that personal norms are influenced by values, the NEP, AC, and AR. Personal norms focus on the evaluation of an individual's actions that are based on morals and are anchored not in a social group like social norms, but rather are anchored in the self (Schwartz, 1977; Schwartz & Howard, 1981). Thus, individuals perform pro-social behaviors when they believe them to be the right things to do regardless of what others expect (Schwartz & Howard, 1981). Also, compliance with an individual's personal norms is related to a feeling of pride, while non-compliance with their personal norms is associated with a feeling of guilt. The concept of personal norms developed by Schwartz (1977) shows evidence that when people are aware of the consequences of their behaviors regarding the well-being of others and when people ascribe the responsibilities to their stable value priorities, personal norms are activated which in turn influence the person's pro-social behavior.

Other studies performed later demonstrated empirical evidence that personal norms influence pro-environmental behavior as well (Nordlund & Garvill, 2002; Stern & Dietz, 1994; Stern et al., 1993; Stern et al., 1995; Thøgersen, 1999; Thøgersen & Ölander, 2006). Indeed, many recent studies have provided evidence that personal norms and obligation-based intrinsic motivations contribute to an explanation of pro-environmental behaviors, such as in the marine context (Wynveen & Sutton, 2015; Wynveen et al., 2015); travel (Doran & Larsen, 2016; Han,

2015; Zhang et al., 2014); climate change (Chen, 2015; Tabi, 2013); energy consumption (van der Werff & Steg, 2015); and recycling (Park & Ha, 2014; Saphores et al., 2012).

Hwang, Lee, and Diddi (2015) examined Generation Y's moral obligation and purchase intentions for apparel products with the corporate social responsibility (CSR) attributes of being organic, fair trade, and recyclable with a convenience sample of 442 Midwestern US university students. They found that moral obligation had positive, significant effects on purchase intentions of apparel products made of organic materials, products with a fair-trade label, and those made using recycled materials. Kim et al. (2015), through a survey of 300 Korean consumers, also found that personal norms statistically have a positive influence on eco-friendly outdoor-wear product purchase intention, supporting Hwang et al.'s findings. Even though pro-environmental intention and pro-environmental behaviors are not perfectly correlated (Bamberg & Möser, 2007), intention is the most immediate and important predictor of behavior (Ajzen, 1991; Fishbein & Ajzen, 2011). This suggests that people with strong obligation-based intrinsic motivation purchase eco-friendly apparel because they feel morally obliged to do so. Therefore, this study proposes the following:

$H_{4\text{-}1}$: Obligation-based intrinsic motivation positively influences eco-friendly apparel purchase behavior.

Enjoyment-based Intrinsic Motivation

The majority of the literature on pro-environmental behaviors, especially those studies guided by the VBN model, focuses on obligation-based intrinsic motivation (Lindenberg & Steg, 2007). The main reasoning for this approach is that pro-environmental behaviors are more closely related to costs (e.g., money, time, effort, discomfort, and boringness) (Hobman & Frederiks, 2014; van der Werff & Steg, 2015; van der Werff et al., 2013a). However, there are

two types of happiness through intrinsic motivation: hedonic enjoyment and Eudaimonia (Waterman, 1993). Hedonic enjoyment refers to a subjective experience that includes the belief that an individual gets meaningful things that he/she needs and wants (Kraut, 1979; Waterman, 1993) and the positive emotions or pleasant affects accompanying this belief (Diener, Suh, Lucas, & Smith, 1999; Kraut, 1979; Waterman, 1993). Hedonic enjoyment, thus, may be expected to be felt whenever a pleasant affect accompanies the satisfaction of fulfilling physical, intellectual, or social-based needs (Waterman, 1993). Whereas, eudaimonia, as feelings of individual expressiveness, focuses on the optimal function of fulfilling an individual's true potentials in everyday life (Waterman, 1993) or psychological happiness in terms of autonomy, competence, relatedness, and life purpose (Diener et al, 2010; Ryan & Deci 2000; Ryff, 1989). According to Telfer (1980), eudaimonia focuses on what is worth desiring and worth having in life; it is a sufficient, but not a necessary, condition for hedonic enjoyment (Telfer, 1980; Waterman, 1993).

Stern (2000) argued environmental behavior might result from multiple non-environmental concerns, such as saving money or a desire for comfort, freedom, or arousal, in addition to environmental intent. Some studies have shown evidence that multiple motives play important roles for pro-environmental behavior (Bamberg & Schmidt, 2003; Harland, Staats, & Wilke, 1999; Lindenberg & Steg, 2007). For example, the online resale company treadUP studied the reasons that customers shop online for secondhand apparel-related products in a survey issued to their customers. The company's findings show that the top reason customers shop for secondhand products is to save money (29% of surveyed), followed by it allows otherwise expensive brands to become more affordable (20%), it's fun (14%), it's eco-friendly, and it's convenient (7%) (threadUP, 2015).

Steg and Perlaviciute et al. (2014) defined enjoyment-based intrinsic motivation as one of the intrinsic motivations that compels individuals to perform pro-environmental behaviors because the individuals enjoy doing it (Ryan & Deci, 2000). Enjoyment is referred to as an emotion tied to the improvement of one's condition and is a strong reaction to self-approval. It is achieved multi-functionally through an activity that leads to one's physical and social welfare (Lindenberg, 2001). Thus, the broader-based the improvement is and the stronger the reaction to self-approval is, the higher the enjoyment (Cerasoli et al., 2014; Lindenberg, 2001). In other words, people enjoy certain behaviors if they perceive them as providing stimulation, comfort, and behavioral confirmation by self and others; status; and allowing improvement of nontangible resources, such as skills and competencies (Bly et al., 2015; Cerasoli et al., 2014; Deci, Koestner, & Ryan, 1999; Eisenberger & Cameron, 1996). Specifically, when an individual puts effort into improving one's condition with long-term effects for abstract and distal goals such as pro-environmental behaviors, feelings of joy are attached to stimulation, comfort, behavioral confirmation, status, and affection (Bly et al., 2015; Lindenberg, 2001; Szmigin & Carrigan, 2006).

De Young (2000) argued that people evaluate some environmental behaviors as worthy behaviors because engaging in pro-environmental behaviors is in line with self-transcendent values that cause them to feel good and to enjoy performing those behaviors. Indeed, some studies have demonstrated that people are more inclined to engage in pro-environmental behavior when they believe that acting pro-environmentally results in pleasure and satisfaction (De Groot & Steg, 2010; Green-Demers, Pelletier, & Ménard, 1997; Koestner et al., 2001; Pelletier, Tuson, Green, Demers, Noels, & Beaton, 1998). Thus, acting pro-environmentally may

not only be the right thing to do, but may also cause people to feel good about themselves through doing the right thing (Steg, Bolderdijk, et al., 2014; Verplanken & Holland, 2002).

This research conceptualizes environmental apparel consumption as a realm within a broader consumption picture. This study also argues that environmentally friendly apparel consumers endorsed by altruistic and biospheric values are addressed on the consumption level, thereby choosing alternative consumption (Szmigin & Carrigan, 2006). In choosing alternative products, environmentally friendly consumers may derive their own feeling of pleasure not only from the purchase itself, but also from their belief that they may bring benefits to others (Bly et al., 2015; Jackson, 2005; Sheth, Sethia, & Srinivas, 2011; Soper, 2007). In an exploratory study of sustainable fashion consumption pioneers who actively engage in sustainable apparel consumption, Bly et al. (2015) examined in which consumption behaviors sustainable fashion pioneers are actively engaged and why, using passive netnography and semi-constructed interviews. They found that the sustainable fashion pioneers' behaviors are not necessarily sacrificial or altruistic, but are rather for enjoyment and well-being (Soper, 2007; Szmigin & Carrigan, 2006). This study used the term "enjoyment" as eudaimonic well-being. In line with the above literature reviews, the current study postulates that people may purchase eco-friendly apparel because it is enjoyable to do so and offers the following hypothesis:

$H_{4\text{-}2}$: Enjoyment-based intrinsic motivation positively influences eco-friendly apparel purchasing behavior.

CHAPTER 4

RESEARCH METHODOLOGY

This chapter presents measurement instruments, sample selection and data collection, population and sample, and analyses used for this study.

Instrument Development

A structured questionnaire consisting of six sections was developed for this study (see Appendix A). The first section involved eco-friendly apparel purchasing. In the second, respondents evaluated their values. In the third section, participants were asked to indicate social norms. The fourth evaluated intrinsic motivation. The fifth section was comprised of items measuring environmental self-identity. Finally, the sixth section gathered information regarding respondents' demographic information, specifically their age, gender, education, ethnicity, marital status, and household income. In order to avoid any negative order effects, subjects were asked to first complete the eco-friendly apparel consumption behavior and the values scale sections, and then the social norms section. The environmental self-identity section was presented after subjects responded to the section regarding intrinsic motivations. The researcher assumed that judgments of the importance of individual altruistic and biospheric values, eco-friendly apparel purchasing, and intrinsic motivations might change after completing the environmental self-identity section. The main reason for this assumption was that people might be more likely to provide socially desirable responses if they answered the questions in the environmental self-identity section first. The research believed that completing the value scale and social norms sections first would not have such negative order effects. Additionally, one

unrelated item was included in the questionnaire to eliminate unengaged respondents. The unrelated item question was worded as follows: “Please select Strongly Disagree” (Question 31). Although including more than one unrelated item would have been ideal, survey length was a concern. The survey items to measure of each variable were adopted from previous research literature and/or revised for use in this study because of their proven reliability and validity. The internal consistency reliability of measurements was assessed by Cronbach’s coefficient alpha. In prior studies, a cut-off value of .70 was suggested to indicate adequate reliability (Kline, 2000; Nunnally, 1978).

Eco-friendly Apparel Purchasing Behavior

Items for the eco-friendly apparel purchasing behavior construct were assessed using self-reported measurements of buying activities related to apparel. Six items were included in the scale. The first five items were from Kim and Damhorst (1998): (1) Buy clothing made from recycled material, (2) Buy second-hand clothing, (3) Select clothing that I can wear over a longer term as opposed to trendy apparel that goes out of style quickly, (4) Buy clothing made of organically grown natural fibers such as cotton, hemp, and bamboo, and (5) Buy clothing with an eco-label that is awarded by a third party. The sixth item was: Buy clothing from eco-conscious companies (Hiller Connell, 2011). Respondents answered using a five-point Likert scale, ranging from 1 (never) to 5 (always) to indicate how frequently they have bought eco-friendly clothing within the last 12 months. These forms of eco-friendly apparel purchasing behavior were assessed using the frequency of consumers’ self-reported eco-friendly clothing buying activities instead of measuring actual engagement.

Value Orientations

For the purposes of this study, the value orientation scale of De Groot and Steg (2007, 2008) was used as a basis to measure three types of respondents' value orientations: egoistic, altruistic, and biospheric values. These value orientations were evaluated using four items each: Egoistic values included social power, wealth, authority, and influence; altruistic values included equality, world peace, social justice, and helpfulness; and biospheric values included environmental protection, respect for the earth, unity with nature, and pollution prevention. Similarly, using an adapted Schwartz's value system (1992), hedonic value orientation was assessed using three items: pleasure, enjoyment of life, and gratification (Lind et al., 2015; Steg, Perlaviciute et al, 2014). The resulting value orientation scale included 15 items, which were put in a randomized order. Respondents rated the level of importance of each item as a guiding principle in their lives ranging from 1 (strongly unimportant) to 7 (strongly important).

Social Norms

Social norms were measured using two distinctive dimensions: the descriptive norm and the injunctive norm. Measurement items for both the descriptive and injunctive norms were put in a randomized order. All measurement items except item 1 were adopted from Park and Smith's work (2007) and modified (e.g., "organ donation" to "purchasing eco-friendly clothing"), and item 1 were used to improve internal reliability for this study. Participants rated the items on a seven-point scale, anchored by 1 (strongly disagree) to 7 (strongly agree). The five items measuring the descriptive norm were as follows: (1) Most of my family members engage in pro-environmental behaviors on a regular basis; (2) Most of my family members engage in purchasing eco-friendly clothing; (3) Most of my friends I value engage in purchasing eco-

friendly clothing; (4) The residents in my city engage in purchasing eco-friendly clothing; and (5) The general public engages in purchasing eco-friendly clothing.

The injunctive norm was measured by the extent to which respondents agreed with the following five items regarding purchasing eco-friendly clothing: (1) Family members whose opinion I value would approve of my engagement in pro-environmental behavior; (2) Family members whose opinion I value would approve of my engagement in purchasing eco-friendly clothing; (3) Close friends who are important to me would support my engagement in purchasing eco-friendly clothing; (4) The residents in my community would support my engagement in purchasing eco-friendly clothing; and (5) The general public would endorse my engagement in purchasing eco-friendly clothing. All measurement items were adopted from Park and Smith's work (2007) and modified as descriptive norm items for this study.

Intrinsic Motivations

Intrinsic motivations were measured in terms of two dimensions: obligation-based and enjoyment-based intrinsic motivation. Respondents rated the strength of their agreement or disagreement on a seven-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree). Obligation-based and enjoyment-based intrinsic motivation items were put in a randomized order. Measurement items were adopted from Steg et al. (2005) and modified to four items (e.g., "energy saving" to "purchasing environmentally friendly clothing") reflecting feelings of moral obligation to purchase environmentally friendly clothing: (1) I feel morally obligated to purchase eco-friendly clothing, regardless of what others say; (2) I would feel guilty if I bought non-eco-friendly clothing; (3) I would be a better person if I purchased eco-friendly clothing; and (4) When I buy new clothing, I feel morally obligated to prioritize selecting eco-friendly clothing over the alternatives.

Enjoyment-based intrinsic motivation was measured with five items. Two items were adopted from Steg et al. (2005) and revised for this study; three items were adopted from Hiller Connell's literature (2011) and also modified for this study. These five measurement items were as follows: (1) When I consider purchasing new clothing, I would be pleased to prioritize selecting eco-friendly clothing; (2) I would be delighted to purchase eco-friendly clothing, regardless of what others say (Steg et al., 2005); (3) I would enjoy searching for eco-friendly labels for clothing purchase; (4) It would be my pleasure to have eco-friendly clothing that is in style; and (5) Trying and evaluating eco-friendly clothing items is pleasurable (Hiller Connell, 2011).

Environmental Self-identity

As mentioned in the literature review chapter, many environmentally sensitive actions that reduce household energy use, involve recycling, and buy environmentally friendly products are now commonplace. Therefore, in order to create a robust measure of environmental self-identity that reflects the U.S. trends, three items were used to assess environmental self-identity in general, with another three items measured domain specific environmental self-identity in apparel. A total of six items to measure the construct of environmental-self-identity were adapted from van der Werff et al. (2013a, 2013b) and revised for this study. Respondents rated the strength of their agreement or disagreement on a seven-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree). The six items were as follows: (1) Purchasing eco-friendly clothing is an important part of who I am; (2) I am the type of person who consider the environmental impact of clothing; (3) I see myself as a person who is engaged in purchasing eco-friendly clothing; (4) Acting environmentally friendly is an important part of who I am; (5) I am

the type of person who acts environmentally friendly; and (6) I see myself as an environmentally friendly person.

Sample Selection and Data Collection

More than 300 adults in the USA were asked to participate in the questionnaire through the popular online survey company Qualtrics, which has been used by many researchers. Online surveys are convenient, quick, and cost-effective (Zikmund, 1999). The respondent panels were selected from diverse geographic areas in the USA, as well as from diverse backgrounds in ethnicity, education, income level, and religion in order to prevent recruitment and conditioning bias. Qualtrics sent e-mails to its panels requesting participation. Respondents were informed that the questionnaire included questions concerning values, beliefs, motivations, norms, and experiences they might have had with purchasing eco-friendly apparel. They were guaranteed anonymity and confidentiality in their responses and were informed that the questionnaire would take about 10 minutes to complete. All respondents were informed that by completing the survey through the Qualtrics system, they were giving their consent to participate in this research project. Respondents were also given instructions about how to indicate their response to each question. In order to avoid skewed and problematic data, the company discarded any respondent that did not spend enough time on the survey or did not follow survey directions. The survey was conducted for one week following approval of the IRB.

Population and Sample

This section introduces the demographic information obtained from the survey participants of this study. The demographic characteristics of the participants are presented by means of descriptive statistics. This study employed a convenience sampling method without specific criteria for selecting respondents. Previous studies have proposed a minimum of 200

respondents as a critical sample size for a study (Hair, Black, Babin, & Anderson, 2010). Gathering a substantial amount of information through a large research sample helps the researcher to amplify the significance and validity of a study (Bryman, 2016). Previous studies have claimed that people's beliefs, attitudes, intentions, and behaviors toward eco-fashion and ethical fashion consumption are different based on gender and age groups (D'Souza, Gilmore, Hartmann, Apaolaza Ibáñez, & Sullivan-Mort, 2015; Manchiraju & Sadachar, 2014; Stolz & Bautista, 2015). Thus, this study used a national sample with a well-balanced ratio of adult male and female consumers from different age groups to generalize the results of this study for all U.S. adults' eco-friendly apparel purchasing behaviors.

To create a sample with balanced sex and age ratios, two demographic questions, participants' gender and age, were asked at the beginning of the questionnaire. The researcher created a targeted quota of participants' gender and age and set a condition to participate in the survey based on whether or not the quota had been met. Using Qualtrics, an online survey

Table 1. Demographic Characteristics

	N	%
Gender		
Male	142	44.8
Female	175	55.2
Age		
19 - 44	180	56.8
45 - 64	90	28.4
Over 65	47	14.8
Education		

Less than college education	118	37.2
College education or advanced degree	199	62.8
Ethnicity		
White or Caucasian American	252	79.5
African American	29	9.1
Hispanic or Latinos(a)	19	6.0
Asian	10	3.2
Other	7	2.2
	317 total	
Marital status		
Single	125	39.4
Married	172	54.3
Other	20	6.3
Employment		
Part-time/Full-time/Self-employed	159	50.2
Unemployed/Retired	140	44.2
Other	18	5.7
Income		
Less than $24,999	58	18.3
$25,000 to $74,999	198	62.5
$75,000 or more	61	19.2

company, a total of 342 adults in the USA were recruited for this study. However, 25 respondents were eliminated because Qualtrics determined the respondents were not sufficiently engaged. As Table 1 presents, the 317 participants consisted of 55.2% females and 44.8% males. The respondents were between the ages of 19 to 71 years old. Respondents indicated their precise age in an open question and were then grouped into age-categories. The mean age of respondents was 43 years old. About 57% of the respondents were between the ages of 19 and 44, 28.4% were between the ages of 45 to 64, and 14.8% were older than 65 years old.

As the USA is a country with a diverse ethnicity, it is necessary to include different ethnic groups in the study because consumers' values, beliefs, norms, motivations, and behaviors in eco-clothing purchasing are likely to be influenced by ethnicity. The ethnic categories used are those distinguished by the U.S. Census Bureau. The majority of the participants were Caucasian (79.5%), while 9.1% were African American, 6% were Hispanic, 3.2% were Asian, and 2.2 % were in the other population groups (American Indian and Alaska Native/Native Hawaiian and Other Pacific Islander/Two or More Races), respectively. In addition, more than one-half (54.3%) of the participants were married, 39.4% were single, and 6.3% were in the other category to describe their relationship status. More than one-half (54.3%) of the respondents had association or less than vocational degree, 11.3% were college students, and 34.4% had a college graduate or an advanced degree. About one-half (50.2%) of the respondents had a full- or part-time job, whereas 21% were not unemployed and 22.4% were retired. Household income before taxes was originally divided into seven categories in the questionnaire and was regrouped into three categories for descriptive statistical purpose. More than one-half of the participants (62.5%) indicated that their income level was between $25,000 and $75,000.

Data Analyses

For the current dissertation, this study conducted the following analyses. First, three exploratory factor analyses (EFA) were performed to validate whether the data support the categorization of variable measurement items into desired factors that were identified on theoretical grounds. Second, Pearson product-moment correlations were analyzed amongst variables to obtain a preliminary idea of reasoning for people's eco-friendly clothing purchasing behavior. Then, this study evaluated the internal consistency of measurement instruments using Cronbach's Alphas. Third, two multi-regression analyses were performed to examine the effects of values, social norms, and environmental self-identity on intrinsic motivations. The first multiple regression analysis examined the prediction of obligation-based motivation and the second analysis examined the prediction of enjoyment-based motivation. Lastly, a hierarchical regression analysis was performed to assess the extent to which intrinsic motivations predicted relationship with eco-friendly apparel purchasing behavior.

CHAPTER 5

RESULTS

Data analysis was performed as follows. First, the collected data were checked for missing values and outliers and cleaned for subsequent analyses. Second, the researcher produced descriptive statistics to describe demographic characteristics of the respondents. Third, the measurement model was assessed using exploratory factor analysis (EFA). Fourth, The Cronbach's alphas were assessed to check the internal reliability of measurement instruments of each variable. Fifth, the descriptive statistics for measurement items and inter-correlations for the variables of this study were produced. This study employed two multi-regression analyses and a hierarchical regression analysis to assess the hypothesized associations between variables using SPSS 24 software.

Preliminary Analysis Using EFA

In order to determine the value orientations measured by the 14 survey instrument items, an exploratory factor analysis (EFA) was performed. Through EFA, this study evaluated whether the data supported the factors of aspects into the four types of value orientation that were identified on theoretical grounds. This study first defined the theoretical components (i.e., the four value measurements) by computing the mean score on value items supposedly related to the value components (orientations). Next, this study computed the correlations between all value items and the value components. For items included in a component, the correlation coefficients were corrected for "self-correlation". Then, this study verified whether the value measurement items correlated the strongest with the value components to which they were assigned on

theoretical grounds. Finally, this study also evaluated the reliability and validity of measurements based on results such as Cronbach's alpha coefficient (Fornell & Larcker, 1981).

The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity confirmed that factor analysis was appropriate for the items measuring value orientations. Values of the KMO statistic below 0.5 are unacceptable, values between 0.7 and 0.8 are good, values between 0.8 and 0.9 are great, and values over 0.9 are excellent (Hutcheson & Sofroniou, 1999). Additionally, all KMO values for individual items should be above 0.5 (Field, 2013). For the samples for this study, the KMO measure of sampling adequacy was 0.908, which falls into the range of being excellent; all KMO values for individual items were greater than 0.83. Therefore, it is appropriate to use factor analysis to analyze value orientation data.

The Bartlett's test of sphericity measures the null hypothesis that the original correlation matrix is an identity matrix. Significance indicates that the correlations between variables are significantly different from zero and the matrix is not an identity matrix. In this study, Bartlett's test of sphericity was significant ($\chi^2 = 2546.837$, $df = 91$, $p = 0.000$), further indicating that factor analysis is appropriate to analyze the data on value orientation (Field, 2013).

To obtain a meaningful factor analysis, this study employed the rules of an eigenvalue greater than 1 and a percentage of variance extracted that accounts for at least 5% of the common variance. Three factors were extracted. To obtain a simpler and theoretically meaningful pattern matrix, an Oblimin rotation with Maximum Likelihood extraction method was applied because Maximum Likelihood allows some inference about the population and if a number fits indices, confidence intervals are usually computed along with it. Furthermore, there are theoretical grounds for supposing that value factors might be correlated (Field, 2013), and Oblique rotation develops factor loadings based on the assumption that the factors are correlated and provides

simple structure compared to orthogonal rotation (Fabrigar, Wegener, MacCallum, & Strahan, 1999)

Various researchers have provided different cut-off values for retention of items based on the value of factor loadings. Some scholars have used a cut-off value of 0.35 (Lederer & Sethi, 1991), while others used the cut-off value of 0.5 (Hair, Anderson, Tatham, & Black, 1998; Rageh Ismail & Spinelli, 2012). In order to obtain meaningful factor rotation results, both cut-offs of 0.35 and 0.50 were selected to evaluate the pattern matrix. The cut-off value of 0.35 led to one additional measurement item for the hedonic factor and one additional item for the egoistic value factor. Based on Hatcher's suggestion (1994) that at least three items with significant loadings should be included for each retained factor, a cut-off value of 0.35 was applied for the factor analysis of values in this study. Unlikely previous studies (De Groot & Steg, 2007, 2008; Steg, Dreijerink, & Abrahamse, 2005; Steg, Perlaviciute, Van der Werff, & Lurvink, 2014), which validated the distinction between biospheric and altruistic values, the EFA of this study could not distinguish between these two values. The items for biospheric and altruistic value orientations loaded on a single factor which was named as bio-altruistic value. Only one item, "helpfulness toward others (AV4)" was cross-loaded on the bio-altruistic factor and egoistic value factors. Therefore, it was dropped. The remaining seven items loaded on two factors: hedonic values and egoistic values. This three-factor solution explained 58.35% of the variance. In addition, the reliability of measurement was also determined through Cronbach's alpha. Table 2 shows that after dropping one item, "helpfulness toward others (AV4)", the Cronbach's alpha was 0.920 for the bio-altruistic value, 0.793 for the hedonic value, and 0.737 for the egoistic value, indicating sufficient internal consistency of measurement (Nunnally, 1978). Even though

the EFA for value items loaded on three factors in this study, the survey was built from existing scales that have been validated in previous literature and the research model was built with

Table 2. EFA Results of Value Orientations

Factor and items	Factor loading
Factor 1: Bio-altruistic Value (Cronbach's α = 0.920)	
BV2. Environmental protection	.912
BV4. Pollution prevention	.901
BV3. Unity with nature	.781
BV1. Respect for the earth	.776
AV2. World peace	.748
AV1. Equality	.545
AV3. Social justice	.532
Factor 2: Hedonic Value (Cronbach's α = 0.793)	
HV1. Pleasure	.827
HV2. Enjoying life	.507
HV3. Gratification	.449
Factor 3: Egoistic Value (Cronbach's α = 0.737)	
EV3. Authority	.762
EV1. Social power	.596
EV2. Wealth	.554
EV4. Influence to others	.483

theory. Therefore, this study first used four value orientations - biospheric, altruistic, egoistic (De Groot & Steg, 2007, 2008; Steg, et al., 2005; Steg, Perlaviciute et al., 2014) and the hedonic value (Schwartz, 1977; Steg, Perlaviciute et al., 2014) and analyzed hypotheses. Then, this study demonstrated further analyses for alternative hypotheses based on three value orientations which were extracted from the current study data.

Similarly, an EFA was conducted to determine the dimensionality of the construct of social norms, as shown in Table 3. The KMO statistic was 0.881, all of the measures of sampling adequacy (MSA) for individual items were greater than 0.814, and Bartlett's test of sphericity score was significant ($\chi^2 = 1703.371$, $df = 28$, $p = 0.000$), verifying the appropriateness of factor analysis for the data on social norms. An initial analysis was run to obtain eigenvalues for each factor in the data. Only one factor had eigenvalues greater than Kaiser's criterion of 1. However, prior studies distinguished descriptive norms and injunctive norms within a set of social norms (Cialdini, Kallgren, & Reno, 1991; Cialdini et al., 1990; Göckeritz, Schultz, Rendón, Cialdini, Goldstein, & Griskevicius, 2010; Jacobson, Mortensen, & Cialdini, 2011; Peattie, 2010; White & Simpson, 2013), this study set the fixed number of factors to extract as two the theoretical grounds, rather than depending on eigenvalues in terms of the dimensions of social norms. Items with factor loadings of 0.35 were selected for the social norm constructs (Lederer & Sethi, 1991). Two items "The general public would endorse my engagement in purchasing eco-friendly clothing (IN1)" and "The residents in my community would support my engagement in purchasing eco-friendly clothing (IN2)" were cross loaded on descriptive norms and injunctive norms. Therefore, those two items were dropped from further analysis. The remaining eight items were loaded on two factors as theorized in this study: descriptive norm and injunctive norm. This proposed two-factor solution explained 67.65% of the variance. The Cronbach's

alpha was 0.895 for the descriptive norm, and 0.871 for the injunctive norm, indicating sufficient internal consistency of measurement (Nunnally, 1978).

Table 3. EFA Results of Social Norms

Factor and items	Factor loading
Factor 1: Descriptive Norm (DN, Cronbach's α = 0.895)	
DN2. Most of my family members engage in purchasing eco-friendly clothing.	.893
DN3. Most of my friends whom I value engage in purchasing eco-friendly clothing.	.836
DN4. The general public engages in purchasing eco-friendly clothing.	.824
DN5. The residents in my city engage in purchasing eco-friendly clothing.	.664
DN1. Most of my family members engage in pro-environmental behaviors on a regular basis.	.559
Factor 2: Injunctive Norm (IN, Cronbach's α = 0.871)	
IN4. Family members whose opinion I value would approve of my engagement in purchasing eco-friendly clothing.	.999
IN5. Close friends who are important to me would support my engagement in purchasing eco-friendly clothing.	.799
IN3. Family members whose opinion I value would approve of my engagement in pro-environmental behavior.	.513

Lastly, an EFA was conducted applying an Oblimin rotation with Maximn Likelihood extraction method to determine the dimensionality of the construct of intrinsic motivations. An initial analysis was run to obtain eigenvalues for factor(s) in the data. Only one factor had eigenvalues greater than Kaiser's criterion of 1. However, as prior studies proposed (Deci & Ryan, 2008; van der Werff et al., 2013a; Waterman et al., 2008), this study set the fixed number of factors to extract as two on the grounds of theoretical conceptualization, rather than depending on eigenvalues in terms of the dimensions of intrinsic motivations.

Table 4. EFA Results of Intrinsic Motivations

Factor and items	Factor loading
Factor 1: Obligation-based Motivation (OM, Cronbach's α = 0.900)	
OM4. When I buy new clothing, I feel morally obligated to prioritize selecting eco-friendly clothing over the alternatives.	.925
OM2. I would feel guilty if I bought non-eco-friendly clothing.	.871
OM1. I feel morally obligated to purchase eco-friendly clothing, regardless of what others say.	.734
Factor 2: Enjoyment-based Motivation (EM, Cronbach's α = 0.864)	
EM4. I would be delighted to purchase eco-friendly clothing, regardless of what others say.	.901
EM2. It would be my pleasure to have eco-friendly clothing that is in style.	.767
EM5. When I consider purchasing new clothing, I would be pleased to prioritize selecting eco-friendly clothing.	.593

Table 4 presents the factors extracted, associated loadings, and Cronbach's alpha for intrinsic motivations. The KMO statistic was 0.866, all the measures of sampling adequacy (MSA) for individual items were greater than 0.838, and Bartlett's test of sphericity score was significant ($\chi^2 = 1339.088$, $df = 15$, $p = 0.000$), verifying the appropriateness of factor analysis for the data on intrinsic motivations. An initial analysis was run to obtain eigenvalues for each factor in the data. Three items "Trying and evaluating eco-friendly clothing items is pleasurable (EM1)", "I would enjoy searching for eco-friendly labels for clothing purchase (EM3)", and "I would be a better person if I purchased eco-friendly clothing (OM3)" were cross-loaded. Therefore, those three items were dropped from further analysis and the remaining six items were retained and loaded on two factors as theorized in this study: obligation-based intrinsic motivation and enjoyment-based intrinsic motivation. This proposed two-factor solution explained 73.67% of the variance. The Cronbach's alpha was 0.900 for obligation-based intrinsic motivation, and 0.864 for enjoyment-based intrinsic motivation, indicating sufficient internal consistency of measurement (Nunnally, 1978).

Prior to conducting multiple regressions and a hierarchical regression, the relevant assumptions of this statistical analysis were tested. First, the bivariate correlations among variables were tested using Pearson's correlation. Second, independent errors were tested with the Durbin-Watson test, which tests for serial correlations between errors. As a conservative rule, Field (2013) suggests that the Durbin-Watson values should be between 1 and 3, and values closer to 2 are better (Field, 2013). The assumption of normality, linearity, and homoscedasticity were checked using residual and scatter plots and were all satisfied (Field, 2013; Hair et al., 1998).

Correlation Analyses

As a follow-up analysis, Cronbach alphas were first analyzed to evaluate the instruments for four value orientations and eco-friendly clothing purchasing behavior. The internal reliability of the four value orientations (egoistic, altruistic, biospheric, and hedonic) was good (α = .74, .84, .91, and .79 respectively). In terms of purchasing behavior, two items "Buy second-hand clothing item (PU2)" and "Select clothing that I can wear over a longer term as opposed to trendy apparel that goes out of style quickly (PU3)" were deleted from the scale, which led to an improvement in Cronbach's alpha. The internal reliability was .83 for purchasing behavior. The final scale of environmental self-identity also showed a good internal reliability (α = .94).

Next, a Pearson product-moment correlation was analyzed amongst variables, including purchasing behavior and values (egoistic, altruistic, biospheric, and hedonic values); social norms (descriptive norm and injunctive norm); intrinsic motivations; and environmental self-identity. Descriptive statistics (means and standard deviations) and the bivariate correlations of the variables are reported in Table 5.

Based on the mean scores, it seems that Americans give a higher priority to altruistic (M = 5.49, SD = .86) and biospheric (M = 5.46, SD = 1.22) values than to egoistic value (M = 4.30, SD = 1.24). Therefore, one should expect that people in the USA are inclined to purchase eco-friendly apparel. However, it should be noticed that hedonic values are also highly prioritized (M = 5.46, SD = 1.08) among this sample. In some purchase decisions, there may be a conflict between people's intentions to do meaningful things for a sustainable lifestyle and their hedonic values. They may be unaware of the negative environmental impact caused by their hedonic shopping behaviors or unwilling to change their behaviors due to the emphasis on their hedonic values.

Correlation coefficients showing the strength of the relationships amongst variables are reported in Table 5 and indicate that all self-reported measures were statistically significantly interrelated. The most significant correlation existed between environmental self-identity and

Table 5. Correlations

	M	*SD*	PU	EV	AV	BV	HV	DN	IN	OM	EM	EI
PU	2.60	0.86	.83									
EV	4.30	1.24	.34***	.74								
AV	5.49	1.15	.23***	.47***	.84							
BV	5.46	1.22	.28***	.42***	.78***	.91						
HV	5.46	1.08	.19**	.52***	.63***	.59***	.79					
DN	4.26	1.31	.63***	.42***	.29***	.39***	.29***	.90				
IN	5.07	1.21	.52***	.28***	.41***	.49***	.39***	.68***	.87			
OM	4.04	1.54	.60***	.43***	.29***	.45***	.28***	.74***	.58***	.90		
EM	4.99	1.27	.52***	.26***	.42***	.49***	.36***	.63***	.76***	.69***	.86	
EI	4.65	1.40	.62***	.43***	.42***	.59***	.37***	.75***	.72***	.84***	.78***	.94

*** $p < .001$. ** $p < .01$. * $p < .05$.
Note. $N = 317$. AV = altruistic value orientation; BV = biospheric value orientation; EV = egoistic value orientation; HV = hedonic value orientation; DN = descriptive norm; IN = injunctive norm; EI = environmental self-identity; OM = obligation-based motivation; EM = enjoyment-based motivation; PU = purchasing behavior. For variable EV, AV, BV, HV, DN, IN, OM, EM, EM, and EI, possible scores could range from 1.00 to 7.00. Possible score range for PU is from 1.00 to 5.00. Values on diagonal are coefficient alpha reliability estimates for multi-item summated rating scales. Where a construct was measure with two items, Pearson's *r* (and significance) is reported.

obligation-based intrinsic motivation ($r = .84$, $p < .001$). The least significant relationship was between hedonic value and eco-friendly apparel purchasing behavior ($r = .19$, $p < .01$). Interestingly, obligation-based motivation was more significantly correlated with descriptive

norm (r = .74, p < .001) than with injunctive norm (r = .58, p < .001), but enjoyment-based motivation was more significantly correlated with injunctive norm (r = .76, p < .001) than descriptive norm (r = .63, p < .001). All other bivariate relationships were statistically significant and positively correlated with each other as well. Unexpectedly, the egoistic value was statistically and positively correlated with obligation-based intrinsic motivation (r = .43, p < .001), enjoyment-based intrinsic motivation (r = .26, p < .001) for purchasing eco-friendly apparel, and eco-friendly apparel purchasing behavior (r = .34, p < .001). The correlations of egoistic value with personal norm (obligation-based intrinsic motivation) and with environmental behaviors in previous research were negative (López & Cuervo-Arango, 2008).

Hypothesis Tests Using Multiple Regression and Hierarchical Regression

A multiple regression using forced entry was performed utilizing obligation-based intrinsic motivation as the criterion and biospheric value, altruistic value, egoistic value, hedonic value, descriptive norm, injunctive norm, and environmental self-identity as predictors in order to determine if obligation-based intrinsic motivation could be predicted as a function of value orientations, social norms, and environmental self-identity. The analysis was found to be statistically significant (F (7, 309) = 127.682, p < .001), indicating that biospheric value, altruistic value, egoistic value, hedonic value, descriptive norm, injunctive norm, and environmental self-identity are good predictors of eco-friendly apparel purchasing-related obligation-based intrinsic motivation. This multiple regression accounted for 74% of the variability, as indicated by the R^2 statistic. Each variable except biospheric values and hedonic values made a significant contribution to this model. The strongest predictor of obligation-based intrinsic motivation was environmental self-identity, followed by descriptive norm. Also,

altruistic values and injunctive norms unexpectedly had negative relationships with obligation-based motivation.

Table 6. Summary of Regression Analysis for Variables Predicting Obligation-based Intrinsic Motivation (N = 317)

	Obligation-based Motivation		
	B	*SE B*	*β*
Biospheric Value	.13	.07	.10
Altruistic Value	-.17	.07	-.13*
Egoistic Value	.11	.05	.09*
Hedonic Value	-.05	.06	-.03
Descriptive Norm	.32	.06	.27***
Injunctive Norm	-.13	.06	-.10*
Environmental Self-identity	.75	.06	.68***
Adjusted R^2	.74		
R^2	.74		

*** $p < .001$. * $p < .05$.

The more respondents endorsed egoistic values, the greater the obligation to purchase eco-friendly apparel they felt (β = .09, $p < .05$). An altruistic value orientation was statistically significantly related to obligation-based motivation but the relationship was negative (β = -.13, $p < .05$). Respondents who strongly identified as environmentally responsible felt more obligation to purchase eco-friendly apparel compared to respondents with a weaker environmental self-

identity (β = .68, p < .001). Furthermore, the more respondents subscribed to descriptive norms, the stronger their obligation-based motivation (β = .27, p < .001). Respondents who scored high on injunctive norms felt less obligation to purchase eco-friendly apparel than respondents who scored low on the injunctive norms (β = -.10, p < .05). These results provided support of $H_{2\text{-}1}$, and $H_{3\text{-}1}$, but rejected $H_{1\text{-}1,}$ $H_{1\text{-}3}$, $H_{1\text{-}5}$, $H_{1\text{-}7}$, and $H_{3\text{-}3}$. In this multiple regression model, multicollinearity was assessed by examining tolerance and the variance inflation factor (VIF). The values of VIF ranged from 1.67 to 3.27 and the values of tolerance were all above .31 for predictive variables. Therefore, the multicollinearity statistics were all within accepted limits (Fields, 2013; Hair et al., 1998).

The second multiple regression was conducted, where enjoyment-based intrinsic motivation was regressed on biospheric value, altruistic value, egoistic value, hedonic value, descriptive norm, injunctive norm, and environmental self-identity in order to determine if enjoyment-based intrinsic motivation could be predicted as a function of those variables. The model was statistically significant (R^2 = .70, F (7, 309) = 102.843, p < .001), indicating that biospheric value, altruistic value, egoistic value, hedonic value, descriptive norm, injunctive norm, and environmental self-identity together explained 70% of the total variance in enjoyment-based intrinsic motivation for eco-friendly apparel purchase. Altruistic value, egoistic value, injunctive norm, and environmental self-identity made a significant contribution to this model. However, biospheric values, hedonic values, and descriptive norm were not significant predictors of enjoyment-based intrinsic motivation. The more respondents endorsed altruistic value, the more they enjoyed purchasing eco-friendly apparel (β = .14, p < .01). Egoistic value orientations negatively influenced enjoyment-based motivation to purchase eco-friendly apparel (β = -.13, p < .01). Respondents who strongly identified themselves as environmentally responsible were

pleased to purchase eco-friendly apparel when compared to respondents having a weaker environmental self-identity (β = .52, p < .001). Furthermore, respondents who scored high on injunctive norm enjoyed purchasing eco-friendly apparel more than respondents who scored low on injunctive norm (β = .37, p < .001). These results provided support of H_{1-4}, H_{1-6}, H_{2-2}, and H_{3-4}, but rejected H_{1-2}, H_{1-8}, and H_{3-2}. Multicollinearity was assessed by examining tolerance and the VIF. The values of VIF ranged from 1.678 to 3.27 and the values of tolerance were all above .31 for predictive variables. Therefore, the multicollinearity statistics were all within accepted limits (Fields, 2013; Hair et al., 1998).

Table 7. Summary of Regression Analysis for Variables Predicting Enjoyment-based Intrinsic Motivation (N = 317)

	Enjoyment-based Motivation		
	B	*SE B*	β
Biospheric Value	-.08	.06	-.08
Altruistic Value	.16	.06	.14**
Egoistic Value	-.13	.04	-.13**
Hedonic Value	.05	.05	.04
Descriptive Norm	.01	.05	.01
Injunctive Norm	.39	.05	.37***
Environmental Self-identity	.47	.05	.52***
Adjusted R^2	.69		
R^2	.70		

*** p < .001. ** p < .01.

One of the objectives in this study was to examine whether a newly-developed intrinsic motivation instrument could reliably distinguish two intrinsic motivation routes. The validity of the intrinsic motivation instrument was tested by relating the two intrinsic motivation routes to eco-friendly apparel purchasing behavior. In order to assess the extent to which intrinsic motivations predicted a relationship with eco-friendly apparel purchasing behavior (as

Table 8. Summary of Hierarchical Regression Analysis for Variables Predicting Eco-friendly Apparel Purchasing Behavior (N = 317)

	Step 1 Purchasing Behavior			Step 2 Purchasing Behavior		
	B	*SE B*	*β*	*B*	*SE B*	*β*
Obligation-base Motivation	.34	.03	.60***			
Obligation-based Motivation				.26	.03	.46***
Enjoyment-based Motivation				.14	.04	.21***
Adjusted R^2	.36			.38		
R^2	.36			.39		
F for change in R^2				98.63***		

*** $p < .001$. ** $p < .01$.

hypothesized in H_4), hierarchical multiple regression analysis was used (see Table 8). Using the enter method, obligation-based intrinsic motivation was added into the regression model as the first block, with enjoyment-based intrinsic motivation added in the second block. The hierarchical regression results showed that the first model was statistically significant (F (1, 315)

= 179.400, $p < .001$, $R^2 = .36$, Adjusted $R^2 = .36$). Obligation-based intrinsic motivation explained 36% of the variance in eco-friendly apparel purchasing behavior. Obligation-based motivation was found to be a significant predictor of purchasing behavior ($\beta = .60$, $p < .001$). Adding enjoyment-based intrinsic motivation to the regression model explained an additional 2.3% of the variance in eco-friendly apparel purchasing behavior; this change in R^2 was significant (F (2, 314) = 98.631, $p < .001$). Both obligation-based and enjoyment-based intrinsic motivations made a significant contribution to this model, but obligation-based intrinsic motivation was a stronger predictor of eco-friendly clothing purchasing than enjoyment-based intrinsic motivation. The more respondents feel obligation to purchase eco-apparel, the more they purchased eco-friendly apparel ($\beta = .46$, $p < .001$). Furthermore, the higher respondents scored on enjoyment-based intrinsic motivation, the more they purchased eco-friendly apparel ($\beta = .21$, $p < .001$). Thus, $H_{4\text{-}1}$ and $H_{4\text{-}2}$ were supported. For this hierarchical regression model, multicollinearity was assessed by examining tolerance and the variance inflation factor (VIF). The values of VIF were 1.90, and the values of tolerance were .53 for both predictive variables. Therefore, the multicollinearity statistics were all within accepted limits (Fields, 2013; Hair et al., 1998).

Alternative Hypothesis Tests Using Multiple Regression

The EFA of this study could not distinguish between biospheric and altruistic values. The items for these two value orientations were loaded on a single factor which was named as bio-altruistic value. A Pearson product-moment correlation was analyzed amongst variables, including purchasing behavior and values (egoistic, bio-altruistic, and hedonic values); social norms (descriptive norm and injunctive norm); intrinsic motivations; and environmental self-identity. Descriptive statistics and the bivariate correlations of the variables are reported in

Appendix C. Based on the mean scores, it seems that Americans give a higher priority to hedonic (M = 5.45, SD = 1.08) and bio-altruistic (M = 5.43, SD = 1.16) values than to egoistic value (M = 4.29, SD = 1.24). Therefore, one should expect that people in the USA are inclined to have concern for other people, environment, and their own happiness.

Correlation coefficients (see Appendix C) shows that all self-reported measures were statistically and significantly interrelated. Bio-altruistic values were statistically and positively correlated with hedonic values (r = .63, p < .001) and egoistic values (r = .48, p < .001). As may be expected, hedonic values correlated positively with egoistic values (r = .52, p < .001).

The EFA for value items were loaded on three factors – bio-altruistic, egoistic, and hedonic values - from the current study data. Thus this study automatically rejected $H_{1\text{-}1}$, $H_{1\text{-}2,}$ $H_{1\text{-}3,}$ and $H_{1\text{-}4}$. Instead, this study proposed the following alternative hypotheses.

$H_{a\text{-}1}$: Bio-altruistic values positively influence obligation-based intrinsic motivation.

$H_{a\text{-}2}$: Bio-altruistic values positively influence enjoyment-based intrinsic motivation.

A multiple regression using forced entry was performed utilizing obligation-based intrinsic motivation as the criterion and bio-altruistic value, egoistic value, hedonic value, descriptive norm, injunctive norm, and environmental self-identity as predictors in order to determine if obligation-based intrinsic motivation could be predicted as a function of value orientations, social norms, and environmental self-identity. The analysis was found to be statistically significant (F (6, 310) = 145.241, p < .001), indicating that bio-altruistic value, egoistic value, hedonic value, descriptive norm, injunctive norm, and environmental self-identity are good predictors of eco-friendly apparel purchasing-related obligation-based intrinsic motivation. This multiple regression accounted for 73% of the variability, as indicated by the R^2 statistic (see Appendix D). None of value orientations made a significant contribution to this

model. The strongest predictor of obligation-based intrinsic motivation was environmental self-identity (β = .70, p < .001), followed by descriptive norm (β = .70, p < .001). Injunctive norm influenced enjoyment-based motivation to purchase eco-friendly apparel but negatively (β = -.11, p < .05). These results provided support of $H_{2\text{-}1}$ and $H_{3\text{-}1}$, but rejected $H_{1\text{-}5}$, $H_{1\text{-}7}$, $H_{3\text{-}3}$, and $A_{1\text{-}1}$. Multicollinearity was assessed by examining tolerance and the VIF. The values of VIF ranged from 1.653 to 3.185 and the values of tolerance were all above .314 for predictive variables. Therefore, the multicollinearity statistics were all within accepted limits (Fields, 2013; Hair et al., 1998).

The second multiple regression was conducted, where enjoyment-based intrinsic motivation was regressed on bio-altruistic value, egoistic value, hedonic value, descriptive norm, injunctive norm, and environmental self-identity in order to determine if enjoyment-based intrinsic motivation could be predicted as a function of those variables (see Appendix E). The model was statistically significant (R^2 = .69, F (6, 310) = 117.090, p < .001), indicating that bio-altruistic value, egoistic value, hedonic value, descriptive norm, injunctive norm, and environmental self-identity together explained 69% of the total variance in enjoyment-based intrinsic motivation for eco-friendly apparel purchase. Bio-altruistic and hedonic values were not significant predictors of enjoyment-based intrinsic motivation., but egoistic value, injunctive norm, and environmental self-identity made a significant contribution to this model. Egoistic value orientations negatively influenced enjoyment-based motivation to purchase eco-friendly apparel (β = -.12, p = .005). Respondents who strongly identified themselves as environmentally responsible were pleased to purchase eco-friendly apparel when compared to respondents having a weaker environmental self-identity (β = .50, p < .001). Furthermore, respondents who scored high on injunctive norm enjoyed purchasing eco-friendly apparel more than respondents who

scored low on injunctive norm (β = .38, p < .001). Thus, $H_{1\text{-}6}$, $H_{2\text{-}2}$, and $H_{3\text{-}4}$ were supported, but $A_{1\text{-}2}$, $H_{1\text{-}8}$, and $H_{3\text{-}2}$ were rejected. Multicollinearity was assessed by examining tolerance and the VIF. The values of VIF ranged from 1.653 to 3.185 and the values of tolerance were all above .314 for predictive variables. Therefore, the multicollinearity statistics were all within accepted limits (Fields, 2013; Hair et al., 1998).

CHAPTER 6

DISCUSSIONS

Major Findings

This study aimed to examine: (1) whether there is a distinction between four value orientations – biospheric, altruistic, egoistic, and hedonic values; and (2) whether the distinction between two intrinsic motivations – obligation-based and enjoyment-based intrinsic motivations – in consumers' eco-friendly apparel purchasing behavior are valid for an overall sample. Exploratory factor analysis (EFA) revealed that, unlike previous studies (De Groot & Steg, 2007, 2008; Steg et al., 2005) which validated the distinction between biospheric and altruistic values, this study could not distinguish between the two types of values. Measurement items loaded on three factors: bio-altruistic, egoistic, and hedonic values. This study also showed that hedonic values were empirically distinguished from bio-altruistic and egoistic values within a set of values most important in the environmental domain. The results showed that the internal consistencies of the scales were sufficient and all were above 0.70. The bio-altruistic value orientation especially showed high internal consistency followed by the hedonic and egoistic value orientations.

For the intrinsic motivations in eco-friendly apparel purchasing behavior, this study questioned whether people act environmentally friendly and are happy in life simultaneously. This is because some self-interested individuals engage in ethical consumption even though any tangible benefits they may receive from purchasing environmentally friendly products are worth less than what they have paid for. Therefore, this study assumed that when individuals have a

strong enjoyment-based intrinsic motivation, they are likely to purchase eco-friendly apparel because they enjoy doing so. To explore whether intrinsic motivations include two distinctive routes, an EFA was conducted setting the number of factors at two, based on prior studies and theoretical conceptualization. The results revealed that each intrinsic motivation measurement item correlated strongest with the intrinsic motivation routes to which it was assigned on theoretical grounds. Therefore, this study validated the distinction between two intrinsic motivations – obligation-based and enjoyment-based intrinsic motivations – in consumers' eco-friendly apparel purchasing. The results showed that the internal consistencies were 0.900 for obligation-based intrinsic motivation and 0.864 for enjoyment-based intrinsic motivation.

Even though this study failed to show a distinction between an altruistic and a biospheric value orientation, it is difficult to draw the conclusion that biospheric and altruistic value orientations cannot be separated because this study only employed EFA and reliability analyses without testing the underlying factor structure. In addition, De Groot and Steg (2007, 2008) validated the distinction between three factors (e.g., egoistic, altruistic, and biospheric) relevant to environmentally friendly behaviors employing CFA. Therefore, this study adopted De Groot and Steg's three value orientations and added the hedonic value orientation to further test the relationships between the value orientations and intrinsic motivations.

This study posited that ascribing to self-transcendent values, such as biospheric and altruistic values, is positively related to intrinsic motivations, and self-enhancement values, including egoistic and hedonic values, are negatively related to intrinsic motivations in purchasing eco-friendly apparel. Also, this study assumed that environmental self-identity influences intrinsic motivations, which in turn affect eco-friendly apparel purchasing behavior. Therefore, this study proposed that those with a strong environmental self-identity are

intrinsically motivated to purchase eco-friendly clothing because they believe that such an act is the right thing to do or enjoyable. Literature suggests that personal norms may be internalized social norms rather than the result of the individual's own moral reflection (Deci & Flaste, 1995; Schwatrz, 1977; Thøgersen, 1999, 2006). Therefore, this study assumed that descriptive norms and injunctive norms may influence consumers' intrinsic motivation for eco-friendly apparel purchasing behavior and tested both relationships. Finally, this study assumed that when individuals have a strong enjoyment-based intrinsic motivation, they are likely to purchase eco-friendly apparel because they enjoy doing so. When individuals have a strong obligation-based intrinsic motivation, they are inclined to purchase eco-friendly apparel because they feel it is the right thing to do and feel guilty for not doing so.

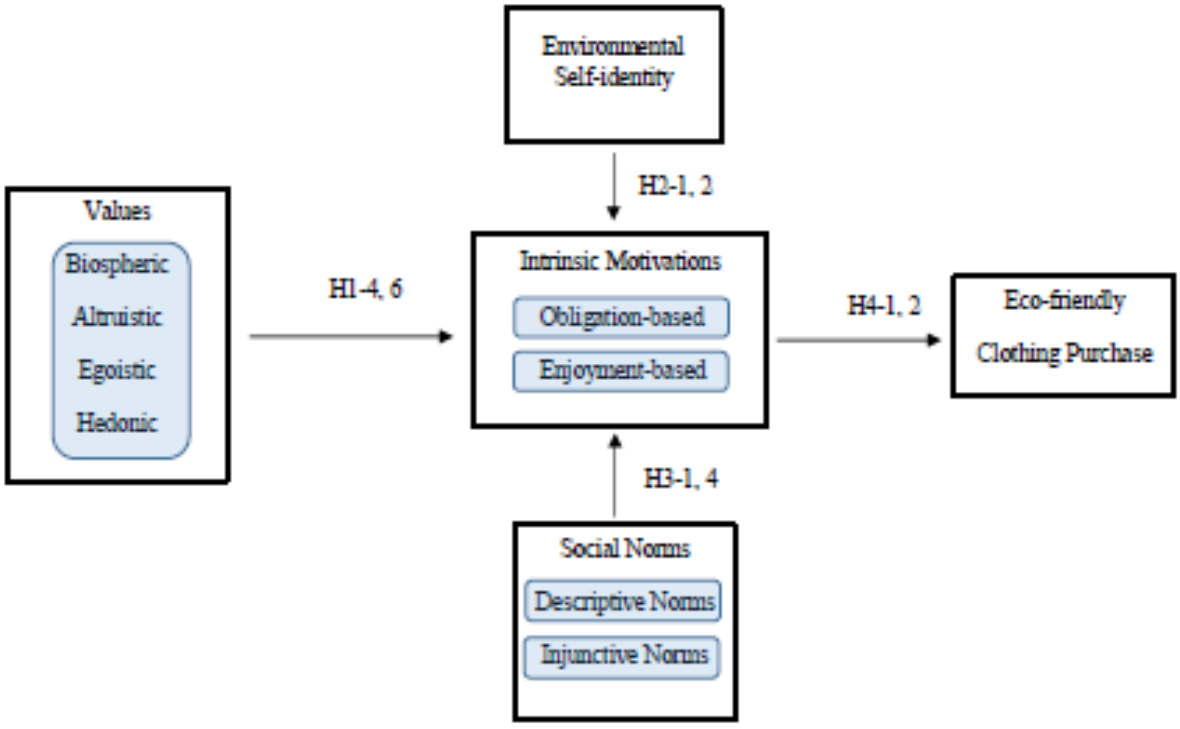

Figure 5. Supported Hypotheses.

In line with the above assumptions, this study proposed four hypotheses, with multiple regression being conducted to test these proposed hypotheses. Figure 5 shows the supported hypotheses. The hypotheses are listed below with an indication of whether each was supported (S) or not supported (NS).

H_1: Values significantly influence intrinsic motivations.

$H_{1\text{-}1}$: Biospheric values positively influence obligation-based intrinsic motivation. (NS)

$H_{1\text{-}2}$: Biospheric values positively influence enjoyment-based intrinsic motivation. (NS)

$H_{1\text{-}3}$: Altruistic values positively influence obligation-based intrinsic motivation. (NS)

$H_{1\text{-}4}$: Altruistic values positively influence enjoyment-based intrinsic motivation. (S)

$H_{1\text{-}5}$: Egoistic values negatively influence obligation-based intrinsic motivation. (NS)

$H_{1\text{-}6}$: Egoistic values negatively influence enjoyment-based intrinsic motivation. (S)

$H_{1\text{-}7}$: Hedonic values negatively influence obligation-based intrinsic motivation (NS)

$H_{1\text{-}8}$: Hedonic values negatively influence enjoyment-based intrinsic motivation (NS)

H_2: Environmental self-identity significantly influences intrinsic motivations.

$H_{2\text{-}1}$: Environmental self-identity positively influences obligation-based intrinsic motivation. (S)

$H_{2\text{-}2}$: Environmental self-identity positively influences enjoyment-based intrinsic motivation. (S)

H_3: Social norms significantly influence intrinsic motivations.

$H_{3\text{-}1}$: Descriptive norm positively and significantly influences obligation-based intrinsic motivation. (S)

$H_{3\text{-}2}$: Descriptive norm positively and significantly influences enjoyment-based intrinsic motivation. (NS)

$H_{3\text{-}3}$: Injunctive norm positively and significantly influences obligation-based intrinsic motivation. (NS)

$H_{3\text{-}4}$: Injunctive norm positively and significantly influences enjoyment-based intrinsic motivation. (S)

H_4: Intrinsic motivations significantly influence eco-friendly apparel purchasing behavior.

$H_{4\text{-}1}$: Obligation-based intrinsic motivation positively influences eco-friendly apparel purchasing behavior. (S)

$H_{4\text{-}2}$: Enjoyment-based intrinsic motivation positively influences eco-friendly apparel purchasing behavior. (S)

Discussions and Implications

Value Orientations

The results of the EFA show that there are three distinctive value orientations: bio-altruistic, egoistic, and hedonic values. The bivariate correlations of hedonic values with the other value orientations and variables used in this study were all positive and strong. The results supported the suggestion that hedonic values can be empirically distinguished from egoistic, altruistic, and biospheric values (Lind et al., 2015; Steg, Perlaviciute et al., 2014). However, this study failed to show a distinction between biospheric and altruistic value orientations like some previous studies (Nordlun & Garvill, 2002, 2003; Schultz et al., 2005; Schultz & Zelezny, 1999; Stern et al., 1999; Thøgersen & Ölander, 2002). Even though the current study adopted the selection of values included in the previous studies where empirically validated the distinction between altruistic and biospheric values, the result of the current study did not support the finding from previous studies (De Groot & Steg, 2007,2008, 2010; Hansla, Gamble, Juliusson, & Gärling, 2008). The reasons the current study could not separate the bio-altruistic factor into

biospheric and altruistic factors may be due to 1) the selection of a sample from the US' and 2) the time when the data was collected. First, the three studies by De Groot and Steg used samples from European countries such as Austria, Czech Republic, Italy, the Netherlands, and Sweden. Hansla et al (2008) also used data from Sweden. The current study used a sample from the USA. Even though researchers have considered pro-environmental behaviors to be pro-social or altruistic behaviors (De Groot & Steg, 2009; Steg & De Groot, 2010), the views toward biospheric and altruistic values may be different between Americans and Europeans. Second, as mentioned in the literature review section for environmental self-identity, peoples' perception on environmentalism and attitudes are constantly changing. The current study corrected data in 2016 while the data in the previous were from 2010 and earlier.

Biospheric value: This study expected that biospheric values, which place weight on non-human species and the environment, would activate obligation-based and enjoyment-based intrinsic motivations. But, unexpectedly, the biospheric value orientation did not contribute significantly and uniquely to the explanation of either obligation- or enjoyment-based intrinsic motivations in a regression analysis that included other value orientations, environmental self-identity, and social norms. These results are contrary to the findings that biospheric values contribute significantly to the explanations of personal norms (De Groot & Steg, 2007, 2008, 2010; Kalofet al., 1999; Lauper et al., 2016; Nordlund & Garvill, 2002, 2003; Schultz et al., 2005; Steg, Bolderdijk at al., 2014). It is understandable that biospheric values did not contribute directly to the explanation of why people purchase eco-friendly apparel. Biospheric values may indirectly influence intrinsic motivations when people are aware of the environmental consequences of not purchasing eco-friendly apparel and ascribe responsibility to protect what they value, such as non-human species and the environment, which in turn influences their eco-

friendly apparel behavior (Chen, 2015; Han, 2015; Jakovcevic & Steg, 2013; Lind et al., 2015; Wynveen & Sutton, 2015; Wynveen et al., 2015; Zhang et al., 2014). For example, a person may not feel obligated to properly throw away or recycle his or her trash because he or she assumes that other people are not engaging in environmentally responsible actions (Bamberg & Schmidt, 2003) or because the possible outcomes of the action are thought to be inconsequential (Montada & Kals, 2000). People with biospheric values consider the environment and other species to be some of the most important things in their lives. However, if they believe purchasing conventional apparel produced with polluting procedures and materials or short-lived fast fashion items not to be detrimental to the environment, their intrinsic motivation may not be activated. To activate intrinsic motivation, the individual must be aware of the consequences of fast fashion or conventional apparel produced using polluting procedures. However, if individuals were aware that their biospheric values were being threatened and believed that their apparel purchasing behavior might cause a negative impact on the environment, they would then believe that purchasing eco-friendly apparel could alleviate the threat(s), thus feeling morally obligated to purchase environmentally friendly apparel.

Separate from each of the objectives of this study, the researcher conducted two additional stepwise multiple regression analyses to explore the importance of predictors in predicting outcome variables. In these two analyses, altruistic, biospheric, egoistic, and hedonic value, descriptive norm and injunctive norm, and environmental self-identity were independent variable, with two different dependent variables: obligation-based motivation and enjoyment-based motivation. In the first stepwise multiple regressions, altruistic, biospheric, and egoistic values, were first entered into the regression equation. Descriptive norms were added in the second model using stepwise method, and environmental self-identity was added in the third

regression model. This processes allowed the researcher to determine the incremental effects of social norms or environmental self-identity over value orientations in predicting obligation-based intrinsic motivation and enjoyment-based intrinsic motivation (see Appendix F).

When the three value orientations were entered to the first regression model, obligation-based intrinsic motivation and biospheric values were statistically significant ($\beta = 52$, $p < .001$). When descriptive norms were added into the second regression model using stepwise method, the strength of the predictive power on obligation-based intrinsic motivation was slightly reduced, but remained as a statistically significant predictor ($\beta = 30$, $p < .001$). When three values, descriptive norms, and environment self-identity were entered to the third regression model, the regression coefficients of biospheric values were readjusted and were not statistically significant. This result suggested that both descriptive norms and environment self-identity are more important to consumers' obligation-based intrinsic motivation to purchase eco-friendly apparel than biospheric value.

In the second stepwise multiple regressions, biospheric values were first entered into the regression equation. Biospheric values and injunctive norms were entered to the second regression model. Descriptive norms were entered in the third model, and environmental self-identity was added in the last regression model using stepwise method to explore the importance of predictors in predicting enjoyment-based motivation.

As shown in Appendix G, when biospheric value orientation was entered to the regression model, it was a significant factor that influences on enjoyment-based intrinsic motivation ($\beta = 49$, $p < .001$). Biospheric values remained significant even after including injunctive norms or descriptive norms. However, when injunctive norms and environment self-identity variables were included with descriptive norms and biospheric values in the regression

model, the regression coefficients of biospheric values were adjusted and became not significant. This result suggested that both injunctive norms (β = 41, p < .001) and environment self-identity (β = 49, p < .001) are more important to consumers' enjoyment-based intrinsic motivation to purchase eco-friendly apparel than biospheric value.

Altruistic value: During the past few decades, many studies on environmental behaviors have considered altruistic values, which reflect appreciation for social justice and other people's well-being, as one of the key predictors of performing environmentally friendly behavior. NAM (Schwartz, 1994; Schwartz & Howard, 1981) and VBN theory (Stern, 2000; Stern et al., 1999) assume that the pro-social or environmental personal norms are activated or deactivated by an individual's *awareness of negative consequences* for others or the environment of his/her intended behavior and *ascription of responsibility* to him-/herself for preventing or lessening these negative consequences. Thus, this study hypothesized that altruistic values would positively influence intrinsic motivations. The results shown by two multiple regression analyses surprisingly showed that the scale measuring altruistic values, significantly, but negatively, influenced obligation-based intrinsic motivation ($H_{1\text{-}3}$), while it statistically and positively influenced enjoyment-based intrinsic motivation to purchase eco-friendly apparel ($H_{1\text{-}4}$, see Table 6 and 7). As shown in Appendix F, one consistent result based on stepwise regression analysis was that altruistic values negatively influenced obligation-based intrinsic motivation. This result is contrary to the findings from other studies (De Groot & Steg, 2007, 2008; Lauper et al., 2016), in which the altruistic value orientation statistically and positively influenced personal norms. The controversial results from this study may be caused by: (1) treating social norms and environment self-identity variables as a primary condition separate from value orientation variables, thus diminishing the predictability of altruistic values on obligation-based

motivation relative to other variables, (2) the addition of enjoyment-based motivation along with obligation-based motivation in the current study, and (3) failing to capture the indirect effects of altruistic values through awareness and responsibility variables, because altruistic values significantly impact the awareness of consequences of energy consumption (Stern et al., 1999; Steg et al., 2005; Nordlund & Garvill, 2002, 2003; De Groot & Steg, 2008). However, it makes sense that consumers who endorse altruistic values are concerned with wellbeing of society. Thus, they would focus on doing something valuable and meaningful for other people instead of for their own gains (De Young, 1986; Stern et al., 1993) resulting in eudaimonic enjoyment (Waterman et al., 2008).

Egoistic value: Egoistic values, which focus on maximizing personal gains, were measured by authority, social power, wealth, and influence on others. Based on literature reviews, egoistic values are negatively related to environmentally friendly beliefs (Kalof et al., 1999; Nordlund & Garvill, 2002, 2003; Schultz et al., 2005; Steg, Bolderdijk at al., 2014). Also, the roles of egoistic values toward personal norms in pro-environmental intentions or behaviors are consistent in that egoistic values influence personal norms negatively (De Groot & Steg, 2007, 2008; Lauper et al., 2016). An exception is Ibtissem (2010)'s finding which suggests that egoistic values do not have any impact on the individual feelings of moral obligation to preserve energy. Therefore, this study posited that egoistic values would negatively influence intrinsic motivations. Unexpectedly, bivariate correlation results showed that egoistic values were statistically and positively correlated to all other variables used in this study. This preliminary analysis did not support previous findings that egoistic values are negatively related to environmental beliefs and behaviors (Kalof et al., 1999; Nordlund & Garvill, 2002, 2003; Schultz et al., 2005; Steg, Bolderdijk at al., 2014). Furthermore, egoistic values statistically and

positively influenced obligation-based motivation, while statistically influencing enjoyment-based intrinsic motivation in a negative direction, which fails to support previous findings (De Groot & Steg, 2007, 2008; Ibtissem, 2010; Lauper et al., 2016).

Those who focus on egoistic values consider costs and benefits of environmental behavior to be personal. Therefore, when the perceived benefits surpass the perceived costs (De Groot & Steg, 2009), an individual who endorses egoistic values would feel obligated to be more involved in the protection of environment if they think their eco-friendly purchasing behavior protects the quality of their own lives.

A person who endorses egoistic values may tend to maintain their healthy life by purchasing environmentally friendly apparel, revealing their financial and environmentally conscious status. Purchasing eco-friendly apparel is visible behavior like buying environmentally friendly cars. As the egoistic values are involved, this variable has a complex role. Sexton and Sexton (2014) explained that one of the main reasons people purchase the Prius, the distinctive-looking Toyota hybrid vehicle, is that it is noticeable by others, even though it is more expensive than similar hybrid vehicles and non-hybrid models. Likewise, people with egoistic values may believe that purchasing or wearing eco-friendly apparel has value as it indicates their financial status and environmental self-identity. Additionally, recent research showed a strong relationship between symbolic attributes of a fuel-efficient car and the car purchasing intention (Nayum & Klöckner, 2014; Schuitema, Anable, & Kinnear, 2013). Likewise, eco-friendly clothing may be related to a sense of self- or social-identity that is reflected by, or built from, the possession of the eco-friendly clothing as a symbolic attribute.

Hedonic value: Hedonic values focus on improving one's feeling and reducing efforts. The defining goals of hedonic values are pleasure, sensuous gratification, and enjoyment.

Thøgersen and Olander (2002) pointed out that hedonic values seemed to play an important role in the propensity to perform environmentally friendly behavior, but those values have not been included in the studies of the relationship between values and environmentally friendly behaviors. No previous study has investigated the relationship between hedonic values and intrinsic motivations, but the hedonic value orientation is in the self-enhancement value concept category and positively related to egoistic value (Steg, Bolderdijk at al., 2014). Thus, this study posited that hedonic values would negatively influence intrinsic motivation. However, the results of this study revealed that hedonic values did not predict either obligation-based or enjoyment-based intrinsic motivation in consumers' eco-friendly apparel purchasing behavior, which is contrary to the claim that hedonic values are one of the antecedents of environmental beliefs and behaviors (Lind et al., 2015; Steg, Perlaviciute et al., 2014).

The bivariate correlation analyses showed statistically positive relationships of hedonic values to intrinsic motivations and purchasing behavior (see Table 5). Apart from the objectives of the study, the researcher performed a further hierarchical regression analysis by adding only biospheric, altruistic, and egoistic values to the model in one step, and adding hedonic values in the next model to see whether hedonic values predict the intrinsic motivations above and beyond the effect of the other three controlled values. The results showed that there were no significant R^2 changes (see Appendix H and I). This means that hedonic values were a distinct factor in value orientations based on the third EFA analysis of this study, the results of which suggest that hedonic values may not promote consumers' eco-friendly apparel purchasing behaviors because they do not activate either obligation-based or enjoyment-based intrinsic motivation for eco-clothing purchasing behavior. This result suggests that the hedonic value orientation should be excluded from the study of relationships between values and pro-environmental attitudes,

intentions, and behaviors. The results of this study supported three value orientations: biospheric, altruistic, and egoistic orientation, which are relevant for understanding environmental beliefs and intentions (De Groot & Steg, 2007, 2008; Lauper et al., 2016). One possible answer to why hedonic values do not play an important role in explaining intrinsic motivations for consumers' eco-clothing purchasing behavior may be related to the influence of past behavior (Verplanken & Aarts, 1999). Continuing to follow individuals' clothing purchasing behavioral routes, which include purchasing up-to-date fashion, fast fashion, clothing produced with conventional materials or methods or unplanned clothing purchased because markdowns may be often perceived as pleasant while changing those purchasing behaviors may be perceived as unpleasant. Additionally, people may not be aware of the negative environmental impacts caused by their hedonic shopping behaviors. Lastly, the influence of hedonic shopping weighted on pleasantness, enjoyment of life, or instant gratification may not induce eudaimonia, because pure hedonic enjoyment is a necessary but insufficient condition for eudaimonia (Telfer, 1980; Waterman et al., 2008).

Environmental Self-identity

One of the objectives of this study was to examine whether intrinsic motivations could be strengthened by environmental self-identity. This study expected that environmental self-identity would positively influence obligation based and enjoyment-based intrinsic motivation to purchase eco-friendly apparel. As expected, this study found that self-identity was related to obligation-based and enjoyment-based intrinsic motivation to purchase eco-friendly apparel. In addition, the results from two multiple regression analyses showed that environmental self-identity was the most powerful predictor of both obligation-based and enjoyment-based motivation among other variables. These results suggest that people with a strong environmental

self-identity not only feel a moral obligation but also enjoy purchasing eco-friendly apparel. The reasons why environmental self-identity influences intrinsic motivations are that personal norms are strongly related to the self-concept or connected with an individual's self-expectations (Schwartz, 1977) and conformity and self-realization are strongly related to eudaimonia (Waterman et al., 2008). Anticipation of or actual conformity to a self-expectation results in pride, enhanced self-esteem, security, or other favorable self-evaluations while its violation produces guilt, self-deprecation, loss of self-esteem, or other negative self-evaluations (Schwartz, 1997). Van der Werff et al (2013a) claimed that pro-environmental behaviors are generally not enjoyable, but environmental self-identity, which is often associated with less pleasure, is related to one's obligation-based motivation to perform pro-environmental behavior. Many pro-environmental actions are related to more effort, less pleasure, and require more costs and sacrificing comfort than standard actions do (Steg, Perlaviciute et al., 2014; ven der Werff et al., 2013a). However, enjoyment as an emotion tends to be strongly activated to the degree of self-approval (Lindenberg, 2001). Thus the self-concept that is the active representation of what individuals think, feel, or believe about themselves significantly influences behavior or affect (Brown, 1998; Jimenez et al., 2010; Markus & Wurf, 1987) and generates eudaimonic feelings (Waterman et al., 2008). The findings of this study contradicted van der Werff and her colleagues' claim about the motivation route of environmental self-identity.

Social Norm

If people believe that relevant others such as their family members, close friends, and other people in their community purchase eco-friendly apparel, they purchase eco-friendly apparel because they feel guilty or feel obligated to purchase it. However, if they perceive that

relevant others approve of their eco-friendly clothing purchases, then people purchase eco-friendly apparel because it is enjoyable.

It has previously been argued that personal norms can be seen as being internalized social norms (Thøgersen, 2006, 2009). Two meta-analyses, done by Bamberg and Möser (2007) and Klöckner (2013), demonstrated that the strength of social norms as a predictor of behavioral intentions or actual behavior is mediated through personal norms. Shifting one's focus from the materialistic things like wealth or product possession, to the sense of meaningful behavior in life to the pursue non-materialistic things like close relationships or following a sense of meaning in life, is not only pro-environmental, but also contributes to eudaimonia (Venhoeven et al., 2013; Waterman et al., 2008). Accordingly, this study posited that the degree to which people think that others purchase eco-friendly apparel or support them purchasing those products themselves positively influences obligation-based and enjoyment-based intrinsic motivation. In terms of the role of the descriptive norm in predicting obligation-based motivation, the result of H_{3-1} supported Park and Sohn (2012)'s findings that descriptive norms affect personal environmental norms. But in predicting enjoyment-based motivation, H_{3-2} was not supported by the results, which suggests the descriptive norm did not have predictive power for enjoyment-based motivation. Injunctive norm was internalized via a different route – It positively influenced enjoyment-based motivation (H_{3-4}), but negatively influenced obligation-based motivation (H_{3-3}). This result did not support Nayum and Klöckner (2014)'s report, in which social norms influenced the personal norms of consumers' fuel-efficient car purchasing, or the results from other studies (Bamberg & Möser, 2007; Klöckner, 2013; Park & Sohn, 2012). A possible interpretation of the negative relationship between injunctive norms and obligation-based motivation may be due to the product domain, which is a visible product category.

Separate from each of the objectives of this study, the researcher conducted two additional stepwise multiple regressions as an exploratory purpose. When descriptive norms and injunctive norms were entered to the first regression model, both descriptive norms (β = 64, p < .001) and injunctive norms (β = 14, p = .006) were statistically significant predictors on obligation-based motivations. When biospheric, altruistic, and egoistic values were added to descriptive norms and injunctive norms in the regression model, the predictive power of descriptive norms on obligation-based intrinsic motivation remained as a statistically significant predictor, but the regression coefficients of injunctive norms were readjusted and were not statistically significant. Furthermore, when environment self-identity was added to the previous regression model, the regression coefficients of injunctive norms were readjusted and became negatively and statistically significant (see Appendix J).

As shown in Appendix K, when injunctive norms and descriptive norms were entered to the first regression model, both descriptive norms (β = 22, p < .001) and injunctive norms (β = 61, p < .001) were statistically significant predictors on obligation-based motivations as well. However, when altruistic values and environment self-identity variables were included with both descriptive norms and injunctive norms in the regression model, the regression coefficients of descriptive norm were adjusted and became not significant even though injunctive norms remained significant (β = 40, p < .001). This result suggested that environment self-identity (β = 48, p < .001) are more important to consumers' enjoyment-based intrinsic motivation to purchase eco-friendly apparel than descriptive norms.

When either or both social norms become internalized (e.g., descriptive norms through obligation-based intrinsic motivation; or injunctive norm through enjoyment-based intrinsic motivation), people do not require an external sanction mechanism to engage in a behavior. The

degree of conformity among social networks and the level of social expectation are sufficiently high for compliance without the threat of social standards or sanctions (Abbot et al., 2013). As the findings of earlier research suggest that relevant norms direct behavior only when they are in focus (Cialdini & Golstein, 2004), the results of this study showed that the strength of individuals' enjoyment-based intrinsic motivation toward purchasing eco-friendly apparel predicted eco-friendly apparel purchasing behaviors only when these individuals focused attention on themselves rather than on external influences or information, especially with injunctive norms. The findings supported Cialdini and Golstien (2004)'s suggestion that individuals' behaviors are not relatively influenced by social norms unless that social information is not internalized or highlighted saliently in consciousness.

If people engage in pro-social behaviors, including pro-environmental behaviors, because of direct or indirect personal benefits such as social approval, the effect on eudaimonia diminishes (Hopper & Nielsen, 1991; Krishna, 2011; Meier & Stutzer, 2008; Venhoeven et al., 2013) because people think of social approval as an external pressure to conformity toward a relevant group(s). But when social norms are internalized as intrinsic motivations, social behavior contributes to eudaimonia (Ryan & Deci, 2000; Schwartz, 1977; Thøgersen, 2006; Venhoeven et al., 2013) because violating internalized personal norms may make people feel guilty, and complying with the personal norms brings pride and enhances self-esteem. This means that if people engage in pro-environmental behaviors because they believe that their relevant social groups do so or approve, not because of their own values and beliefs, then the consequences of violating or complying with social norms are not tied to individuals' self-concept. Thus, people are less likely have eudaimonia.

Intrinsic Motivations

One goal of this study was to explore whether intrinsic motivation to purchase eco-friendly apparel had two distinctive paths. Those paths are obligation-based and enjoyment-based. If so, then to find whether intrinsic motivations including enjoyment-based provide statistically significant prediction power over obligation-based motivation alone. Using EFA and hierarchical regression analysis, this study found that motivation had two distinctive paths explaining why people purchase eco-friendly apparel. Also, adding enjoyment-based motivation increased the predictive power of consumers' eco-apparel purchasing behavior significantly.

Conclusions

Despite the uncertainty about whether and when the positive results of their pro-environmental behaviors will become visible, individuals whose goals are normative or enjoyment through their behaviors feel they can effectively contribute to environmental protection and believe their pro-environmental behavior is the right thing to do and is worthwhile. Thus, people feel satisfied by and proud of their pro-environmental behaviors (Eigner, 2001; Kirby & Guastello, 2001; Venhoeven et al., 2013). In purchasing eco-friendly products, environmentally friendly consumers may derive their own feelings of pleasure not only from the purchase itself, but also from their belief that they may bring benefits to others (Bly et al., 2015; Jackson, 2005; Sheth et al., 2011; Soper, 2007). Likewise, people purchase eco-friendly apparel not only because it is the right thing to do, but also because it feels good when behavior reflect their principal values such as biospheric, altruistic, and egoistic; their environmental self-identity; and their internalized social norms.

The findings of this study suggest that people are likely to purchase eco-friendly apparel when: 1) their obligation-based intrinsic motivations are tied to egoistic values, environmental

self-identity, and descriptive norms; or 2) their enjoyment-based intrinsic motivations are activated by altruistic, environmental self-identity, and injunctive norms. Consideration of environmental-self-identity provides the most stable basis for eco-friendly apparel purchase via both the obligation-based route and the enjoyment-based route. When designing messages or interventions to promote stable eco-friendly apparel purchasing behavior, it is important to strengthen environmental self-identity at the same time, decreasing the conflict between environmental self-identity and hedonic values. Additionally, people showed a disposition to purchase eco-friendly apparel because they are obligated to or enjoy doing so. Therefore, messages or interventions should strengthen egoistic values, environmental self-identity, and descriptive norms to activate obligation; or altruistic values, environmental self-identity, and injunctive norms to activate enjoyment, respectively. In addition, this study verified that there are two internal motivation routes, which are obligation-based and enjoyment -based motivations. Therefore, it is recommended that practitioners of eco-friendly apparel companies or non-profit environmental organizations develop messages or interventions informing people that purchasing eco-friendly apparel is right and meaningful, stimulating them to choose eco-friendly apparel of their own free will. That would increase people's well-being and form a positive link between eco-friendly purchasing and eudaimonia.

Limitations and Suggestions for Future Research

A varied body of research on consumers' pro-environmental or sustainable textiles and apparel purchasing behaviors exists, but the majority of studies have focused on organic cotton products or the organic cotton-blended T-shirt category. However, limited research has investigated eco-friendly apparel such as products made from recycled consumer waste. Apparel products from recycled consumer waste, such as plastic bottles or waste polyester yarns or

fabrics and jeans that use less water in the finishing process, have been available for more than 20 years. It is apparent that more effort is required to educate and inform consumers' eco-friendly apparel consumption behavior so that consumers can engage in environmentally friendly behaviors and do their parts to help reduce environmental impacts on the planet. Such informative endeavors and findings from this study might benefit non-profit organizations, educational institutions, governments, and practitioners, thereby contributing to environmentally friendly consumption behavior of textiles and apparel products.

The results of this dissertation contribute to existing textiles and apparel studies in two ways. First, this study found controversial roles of altruistic and egoistic values on obligation-based intrinsic motivation. The multiple regression analysis showed that altruistic values influenced obligation-based motivation statistically but negatively. However, egoistic values statistically and positively influenced obligation-based motivation. In order to investigate consumers' decision-making processes in purchasing eco-friendly apparel, VBN theory, which has rarely been adopted to date in the textiles and apparel literature, was proposed and tested. Therefore, this study provides a theoretical contribution, as the existing literature has generally relied on the TPB model (Ajzen, 1991) to explain consumers' intentions and eco-friendly apparel purchasing behavior. This study also provides a basis for the future comparison of the amount of variance explaining eco-friendly apparel consumption between TPB and VBN theory. The TPB does not take into account the moral aspect but includes the subjective norm, while the VBN model focuses more on values and the personal norm but neglects the social norm (Kaiser et al., 2005).

Second, this study extended the VBN theory by including environmental self-identity and social norms in the area of eco-friendly apparel purchasing. Furthermore, this study empirically

distinguished hedonic values from bio-altruistic and egoistic values. However, hedonic values were not found to be a key antecedent in consumers' attitudes and pro-environmental behavior. Finally, this study distinguished two types of intrinsic motivations that influence individuals' eco-friendly apparel purchasing behavior: obligation-based intrinsic motivation and enjoyment-based intrinsic motivation. Thereby, the findings of this study shed light on theoretical contributions to consumers' eco-friendly apparel purchasing behavior.

Although this study contributes to the literature, several limitations that provide promising directions for future research in pro-environmental behavior in apparel domain exist. First, this study used and empirically tested enjoyment-based intrinsic motivation as the meaning of eudaimonia reflecting values, environmental self-identity, and social norms in consumers' eco-friendly apparel purchasing behavior because eudaimonia is a sufficient condition for hedonic enjoyment (Telfer, 1980; Waterman et al., 2008). However, this study did not use an actual measurement for eudaimonia (e.g., the questionnaire for eudaimonic well-being; QEWB, Waterman et al., 2010 or personally expressive activities questionnaire – standard form; PEAQ-S, Waterman et al., 2008). Therefore, future research could obtain a more distinctive and relevant analysis of consumers' eudaimonia as intrinsic motivation in eco-friendly apparel purchasing behavior. This would allow researchers to robustly theorize two paths – obligation-based and enjoyment-based intrinsic motivation - that environmentally conscious consumers engage in when purchasing eco-friendly apparel.

Second, this study viewed values as a primary factor influencing intrinsic motivations behind people's tendencies to purchase eco-friendly apparel along with other variables such as environmental self-identity and social norms. Treating values, environmental self-identity, and social norms on the same level as primary factors for intrinsic motivation may cause distortion in

each value's predictive power. Values are abstract, distal, and maintain stability over time (Feather, 1995; Stern, 2000). Values reflect what people find important in their lives and therefore affect how people want to see themselves (Feather, 1995; Gardner & Stern, 2002; Jakovcevic & Steg, 2013; Steg, Bolderdijk et al., 2014). Values and self-identity have been viewed as key prerequisite factors for environmental attitudes, intentions, and behaviors (Gatersleben et al., 2014; Steg & De Groot, 2012: Van der Werff et al., 2014). This suggests that the self-identity reflecting value should be viewed as a secondary factor influencing intrinsic motivations for any future study.

Third, this study viewed social norms, along with other variables such as values and environmental self-identity as primary factor influencing the intrinsic motivations behind why people tend to purchase eco-friendly apparel. Values directly or indirectly motivate behavior, but the relation between values and behaviors is partially interrupted by social pressures (Bardi & Schwartz, 2003). Additionally, environmental behavior depends on personal and situational variables in an interactive way. When a high conflict level exists between personal norms and situational conditions, the predictive power of personal variables tends to be minimal, whereas in the case of consistency between them it tends to be maximal (Corraliza & Berenguer, 2000). In line with those claims, it is suggested to study the moderating effects of social norms: between values and intrinsic motivations; or between intrinsic motivations and purchasing intentions or behaviors for the future study.

Fourth, due to parsimony, most studies of individual environmental values use surveys rather than direct observations of environmentally consequential behavior (Sirakaya-Turk, Baloglu, & Mercado, 2014). Like the majority of other studies investigating the relationship between values and behaviors asking questions using "behavioral intentions", "willing to pay",

or “self-reported behavior”, this study used self-reported frequency of purchasing eco-friendly apparel in the past year instead of examining actual behavior. It is well established that the link between self-reported behavior or behavioral intentions and actual behavior is far from perfect.

Fifth, both personal values and self-identity are structures that are ever-changing during the entire lifecycle, not just during the formative years. Each major stage during the lifecycle as well as other critical periods in this cycle brings appropriate changes to the self-identity of the individual (Proshansky, Fabian, & Kaminoff, 1983). Many studies have reported that consumers’ pro-environmental behaviors differ by age group (Hill & Lee, 2012; Manchiraju & Sadachar, 2014; Stolz & Bautista, 2015), sex (D'Souza et al., 2015; Manchiraju & Sadachar, 2014; van der Laan & Velthuis, 2013), and their countries’ level of economic development (Khare, 2015). Therefore, future research should explore this possibility in greater depth.

Lastly, the TPB has been applied to environmental behavior and received strong empirical support (Heath & Gifford, 2002; Smith & Paladino, 2010), However, it has been criticized for having a weak relation between attitude and behavior (Joshi & Rahman, 2015) and underrepresenting the impact of morality on environmental behavior (Klöckner & Blöbaum, 2010; Thøgersen, 1996). While the NAM and VBN theory appeared to be successful in explaining low-cost environmental behavior and good intentions (Steg & Vlek, 2009), some studies suggested using an integrated theory of both TPB and the VBN theory (Han, 2015; Klöckner, 2013; Klöckner & Blöbaum, 2010; López-Mosquera & Sánchez, 2012) to augment the predictability of environmental behaviors. Therefore, utilizing the integrated theory to understand consumers’ eco-friendly apparel purchasing behaviors is suggested for future studies.

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APPENDICES

APPENDIX A

SURVEY QUESTIONNARE

1. What is your age? _____

2. Please indicate your gender: _____ Male _____ Female

***Instructions*: Please indicate how often you have done for the following within last 12 months (Question 3 to Question 8).**

3. I have bought clothing made from recycled material.

Never _____:_____:_____:_____:_____ Always
1 2 3 4 5

4. I have bought second-hand clothing.

Never _____:_____:_____:_____:_____ Always
1 2 3 4 5

5. I have selected clothing that I can wear over a longer term as opposed trendy apparel that goes out of style quickly.

Never _____:_____:_____:_____:_____ Always
1 2 3 4 5

6. I have bought clothing made of organically grown natural fibers such as cotton, hemp, and bamboo.

Never _____:_____:_____:_____:_____ Always
1 2 3 4 5

7. I have bought clothing with an eco-label that is awarded by a third party.

Never _____:_____:_____:_____:_____ Always
1 2 3 4 5

8. I have bought clothing from eco-conscious companies.

Never _____:_____:_____:_____:_____ Always
1 2 3 4 5

***Instructions*: Please indicate how important each item is as a guiding principle in your life (Question 9 to Question 23).**

9. How important is *"social power"* to you as a guiding principle in your life?

Not important at all _____:_____:_____:_____:_____:_____:_____ Extremely important

1 2 3 4 5 6 7

10. How important is *"equality"* to you as a guiding principle in your life?

Not important at all _____:_____:_____:_____:_____:_____:_____ Extremely important

1 2 3 4 5 6 7

11. How important is *"respect for the earth"* to you as a guiding principle in your life?

Not important at all _____:_____:_____:_____:_____:_____:_____ Extremely important

1 2 3 4 5 6 7

12. How important is *"pleasure"* to you as a guiding principle in your life?

Not important at all _____:_____:_____:_____:_____:_____:_____ Extremely important

1 2 3 4 5 6 7

13. How important is "*wealth*" to you as a guiding principle in your life?

Not important at all _____:_____:_____:_____:_____:_____:_____ Extremely important

1 2 3 4 5 6 7

14. How important is "*world peace*" to you as a guiding principle in your life?

Not important at all _____:_____:_____:_____:_____:_____:_____ Extremely important

1 2 3 4 5 6 7

15. How important is "*environmental protection*" to you as a guiding principle in your life?

Not important at all _____:_____:_____:_____:_____:_____:_____ Extremely important

1 2 3 4 5 6 7

16. How important is "*enjoying life*" to you as a guiding principle in your life?

Not important at all _____:_____:_____:_____:_____:_____:_____ Extremely important

1 2 3 4 5 6 7

17. How important is "*authority*" to you as a guiding principle in your life?

Not important at all _____:_____:_____:_____:_____:_____:_____ Extremely important

1 2 3 4 5 6 7

18. How important is "*social justice*" to you as a guiding principle in your life?

Not important at all _____:_____:_____:_____:_____:_____:_____ Extremely important

1 2 3 4 5 6 7

19. How important is "*unity with nature*" to you as a guiding principle in your life?

Not important at all _____:_____:_____:_____:_____:_____:_____ Extremely important

1 2 3 4 5 6 7

20. How important is "*gratification*" to you as a guiding principle in your life?

Not important at all _____:_____:_____:_____:_____:_____:_____ Extremely important

1 2 3 4 5 6 7

21. How important is "*influence to others*" is to you as a guiding principle in your life?

Not important at all _____:_____:_____:_____:_____:_____:_____ Extremely important

1 2 3 4 5 6 7

22. How important is "*helpfulness toward others*" to you as a guiding principle in your life?

Not important at all _____:_____:_____:_____:_____:_____:_____ Extremely important

1 2 3 4 5 6 7

23. How important is "*pollution prevention*" to you as a guiding principle in your life?

Not important at all _____:_____:_____:_____:_____:_____:_____ Extremely important

1 2 3 4 5 6 7

Pro-environmental behaviors are actions that people do in daily life in which they consciously seek to minimize the negative impact of ones' actions on the nature, for example, recycling, and reducing energy and water consumption. *Eco-friendly clothing* is defined as clothing that is either second-hand or produced with environmentally friendly materials.

***Instructions*: Please indicate the extent to which you agree or disagree with the following items (Question 24 to Question 34).**

24. Most of my family members engage in pro-environmental behaviors on a regular basis.

Strongly disagree _____:_____:_____:_____:_____:_____:_____ Strongly agree

1 2 3 4 5 6 7

25. The general public would endorse my engagement in purchasing eco-friendly clothing.

Strongly disagree _____:_____:_____:_____:_____:_____:_____ Strongly agree

1 2 3 4 5 6 7

26. Most of my family members engage in purchasing eco-friendly clothing.

Strongly disagree _____:_____:_____:_____:_____:_____:_____ Strongly agree

1 2 3 4 5 6 7

27. The residents in my community would support my engagement in purchasing eco-friendly clothing.

Strongly disagree _____:_____:_____:_____:_____:_____:_____ Strongly agree

1 2 3 4 5 6 7

28. Most of my friends I value engage in purchasing eco-friendly clothing.

Strongly disagree _____:_____:_____:_____:_____:_____:_____ Strongly agree

1 2 3 4 5 6 7

29. Family members whose opinion I value would approve of my engagement in pro-environmental behavior.

Strongly disagree _____:_____:_____:_____:_____:_____:_____ Strongly agree

1 2 3 4 5 6 7

30. The general public engages in purchasing eco-friendly clothing.

Strongly disagree _____:_____:_____:_____:_____:_____:_____ Strongly agree

1 2 3 4 5 6 7

31. Please select Strongly disagree.

Strongly disagree _____:_____:_____:_____:_____:_____:_____ Strongly agree

1 2 3 4 5 6 7

32. Family members whose opinion I value would approve of my engagement in purchasing eco-friendly clothing.

Strongly disagree _____:_____:_____:_____:_____:_____:_____ Strongly agree

1 2 3 4 5 6 7

33. The residents in my city engage in purchasing eco-friendly clothing.

Strongly disagree _____:_____:_____:_____:_____:_____:_____ Strongly agree

1 2 3 4 5 6 7

34. Close friends who are important to me would support my engagement in purchasing eco-friendly clothing.

Strongly disagree _____:_____:_____:_____:_____:_____:_____ Strongly agree

1 2 3 4 5 6 7

Pro-environmental behaviors are actions that people do in daily life in which they consciously seek to minimize the negative impact of ones' actions on the nature, for example, recycling, and reducing energy and water consumption. *Eco-friendly clothing* is defined as clothing that is either second-hand or produced with environmentally friendly materials.

***Instructions*: Please indicate the extent to which you agree or disagree with the following items (Question 35 to Question 43).**

35. I feel morally obligated to purchase eco-friendly clothing, regardless of what others say.

Strongly disagree _____:_____:_____:_____:_____:_____:_____ Strongly agree

1 2 3 4 5 6 7

36. Trying and evaluating eco-friendly clothing items is pleasurable.

Strongly disagree _____:_____:_____:_____:_____:_____:_____ Strongly agree

1 2 3 4 5 6 7

37. I would feel guilty if I bought non-eco-friendly clothing.

Strongly disagree _____:_____:_____:_____:_____:_____:_____ Strongly agree

1 2 3 4 5 6 7

38. It would be my pleasure to have eco-friendly clothing that is in style.

Strongly disagree _____:_____:_____:_____:_____:_____:_____ Strongly agree

1 2 3 4 5 6 7

39. I would be a better person if I purchased eco-friendly clothing.

Strongly disagree _____:_____:_____:_____:_____:_____:_____ Strongly agree

1 2 3 4 5 6 7

40. I would enjoy searching for eco-friendly labels for clothing purchase.

Strongly disagree _____:_____:_____:_____:_____:_____:_____ Strongly agree

1 2 3 4 5 6 7

41. When I buy new clothing, I feel morally obligated to prioritize selecting eco-friendly clothing over the alternatives.

Strongly disagree _____:_____:_____:_____:_____:_____:_____ Strongly agree

1 2 3 4 5 6 7

42. I would be delighted to purchase eco-friendly clothing, regardless of what others say.

Strongly disagree _____:_____:_____:_____:_____:_____:_____ Strongly agree

1 2 3 4 5 6 7

43. When I consider purchasing new clothing, I would be pleased to prioritize selecting eco-friendly clothing.

Strongly disagree _____:_____:_____:_____:_____:_____:_____ Strongly agree

1 2 3 4 5 6 7

Pro-environmental behaviors are actions that people do in daily life in which they consciously seek to minimize the negative impact of ones' actions on the nature, for example, recycling, and reducing energy and water consumption. *Eco-friendly clothing* is defined as clothing that is either second-hand or produced with environmentally friendly materials.

***Instructions*: Please indicate the extent to which you agree or disagree with the following statements (Question 44 to Question 49).**

44. Purchasing eco-friendly clothing is an important part of who I am.

Strongly disagree _____:_____:_____:_____:_____:_____:_____ Strongly agree

1 2 3 4 5 6 7

45. I am the type of person who consider the environmental impact of clothing.

Strongly disagree _____:_____:_____:_____:_____:_____:_____ Strongly agree

1 2 3 4 5 6 7

46. I see myself as a person who is engaged in purchasing eco-friendly clothing.

Strongly disagree _____:_____:_____:_____:_____:_____:_____ Strongly agree

1 2 3 4 5 6 7

47. Acting environmentally friendly is an important part of who I am.

Strongly disagree _____:_____:_____:_____:_____:_____:_____ Strongly agree

1 2 3 4 5 6 7

48. I am the type of person who acts environmentally friendly.

Strongly disagree _____:_____:_____:_____:_____:_____:_____ Strongly agree

1 2 3 4 5 6 7

49. I see myself as an environmentally friendly person.

Strongly disagree _____:_____:_____:_____:_____:_____:_____ Strongly agree

1 2 3 4 5 6 7

***Instructions*: Please answer the following questions about yourself.**

1. What is the highest level of education you have completed?
   _____ a. Less than high school
   _____ b. High school graduate or equivalent
   _____ c. Associates/technical/vocational degree
   _____ d. College student
   _____ e. College graduate
   _____ f. Graduate student
   _____ g. Graduate school or higher
2. The ethnicity that best describes you is
   _____ a. African American
   _____ b. American Indian or Alaska Native
   _____ c. Asian
   _____ d. Hispanic or Latino(a)
   _____ e. Native Hawaiian or Other Pacific Islander
   _____ f. White or Caucasian American
   _____ g. Other: Please specify _____
3. What is your current marital status?
   _____ a. Single _____ b. Married _____ c. Other

4. What is your employment status?

_____ a. Employed part-time
_____ b. Employed full-time
_____ c. Self-employed
_____ d. Not employed
_____ e. Retired
_____ f. Other: Please specify _____

5. What is your annual household income?

_____ a. Less than $ 15,000
_____ b. $ 15,000 to $ 24,999
_____ c. $ 25,000 to $ 34,999
_____ d. $ 35,000 to $ 49,999
_____ e. $ 50,000 to $ 74,999
_____ f. $ 75,000 to $ 99,999
_____ g. $ 100,000 or more

APPENDIX B

CONSENT LETTER FOR THE SURVEY

Consent Letter

Date

Dear Research Participant:

I am currently a graduate student under the guidance of Dr. Yoo-Kyoung Seock in the Department of Textiles, Merchandising and Interiors at the University of Georgia. I invite you to participate in this study entitled *"The Role of Values, Environmental Self-identity, Intrinsic motivations, and Social Norms in Consumers' Eco-friendly Apparel Purchasing Behavior."* The purpose of this study is to examine what factors influence consumers' decision making process on clothing purchase.

You are invited to participate in this study if you are at least 18 years old. The survey should take about 10 minutes and you will be compensated the agreed upon amount via your panel participation. Your participation will involve answering questions about your clothing purchasing experiences, values, motivations, identity, and social norms.

Your participation in this study is voluntary, and you may choose not to participate or stop at any time without penalty or loss of benefits to which you are entitled. If you decide to stop or withdraw from the study, the information/data collected from or about you up to the point of withdrawal will be kept as part of the study and may continue to be analyzed.

The survey results will be solely used for academic research purposes and the data collected about the participant will be confidential. Once the researcher receives the completed surveys, standard confidentiality procedures will be employed. The participants' information will be stored in a password protected file in the Qualtrics system, and only the principal investigator, Dr. Yoo-Kyoung Seock and co-principle investigator, Soo Hyun Kim, will be able to access your information. No individually identifiable information about participants will be shared with others, except if necessary to protect participant's rights or welfare; or if required by law. The results of this study may be published, but your name or any identifying information will not be used. The published results will be presented in summary form only.

The findings from this study may provide information on consumer's values, self-identity, social norms, and intrinsic motivation relating to clothing purchase. There are no known risks or discomforts associated with the study. You will be compensated the agreed upon amount via your panel participation, and it is only for your participation.

If you have any questions about this research, please feel free to send an e-mail to soohkim@uga.edu. Question or concerns about your rights as a research participant should be directed to The Chairperson, University of Georgia Institutional Review Board, 609 Boyd GRSC, Athens, Georgia 30602; telephone (706) 542-3199; email address irb@uga.edu.

By completing this survey through the Qualtrics system, you are agreeing to participate in the above described research project. Thank you for your consideration! Please keep this letter for your records.

Sincerely,

Soo Hyun Kim

PhD Candidate

Textile, Merchandising and Interiors
University of Georgia

APPENDIX C

CORRELATIONS FOR VARIABLES BASED ON THIS STUDY DATA

	M	*SD*	PU	EV	BAV	HV	DN	IN	OM	EM	EI
PU	2.60	0.86	.83								
EV	4.29	1.24	.34***	1.0							
BAV	5.43	1.16	.28***	.48***	1.0						
HV	5.45	1.08	.19**	.52***	.63***	1.0					
DN	4.26	1.31	.63***	.42***	.37***	.29***	1.0				
IN	5.07	1.21	.52***	.28***	.48***	.39***	.68***	1.0			
OM	4.04	1.54	.60***	.43***	.42***	.28***	.74***	.58***	1.0		
EM	4.99	1.27	.52***	.26***	.48***	.36***	.63***	.76***	.69***	1.0	
EI	4.65	1.40	.62***	.43***	.53***	.37***	.75***	.72***	.84***	.78***	1.0

Note. $N = 317$. For variable EV, BAV, HV, DN, IN, OM, EM, EM, and EI, possible scores could range from 1.00 to 7.00. Possible score range for PU is from 1.00 to 5.00. Values on diagonal are coefficient alpha reliability estimates for multi-item summated rating scales. Where a construct was measure with two items, Pearson's *r* (and significance) is reported.

*** $p < .001$. ** $p < .01$. * $p < .05$

APPENDIX D

FIRST REGRESSION ANALYSIS BASED ON THIS STUDY DATA

Summary of Regression Analysis for Variables Predicting Obligation-based Intrinsic Motivation (N = 317)

	Obligation-based Motivation		
	B	*SE B*	*β*
Bio-altruistic Value	-.02	.06	-.01
Egoistic Value	.09	.05	.07
Hedonic Value	-.07	.06	-.05
Descriptive Norm	.33	.06	.28***
Injunctive Norm	-.14	.06	-.11*
Environmental Self-identity	.77	.06	.70***
Adjusted R^2	.73		
R^2	.74		

*** $p < .001$. * $p < .05$

APPENDIX E

SECOND REGRESSION ANALYSIS BASED ON THIS STUDY DATA

Summary of Regression Analysis for Variables Predicting Enjoyment-based Intrinsic Motivation (N = 317)

	Enjoyment-based Motivation		
	B	*SE B*	*β*
Bio-altruistic Value	.05	.05	.05
Egoistic Value	-.12	.04	-.12**
Hedonic Value	.07	.05	.06
Descriptive Norm	.01	.05	.01
Injunctive Norm	.39	.05	.38***
Environmental Self-identity	.46	.05	.50***
Adjusted R^2	.69		
R^2	.69		

*** $p < .001$. ** $p < .01$.

APPENDIX F

FIRST STEPWISE REGRESSION ANALYSIS

Summary of Stepwise Regression Analysis for Variables Predicting Obligation-based Intrinsic Motivation (N = 317)

	Model 1			Model 2			Model 3		
	OM			OM			OM		
	B	*SE B*	*β*	*B*	*SE B*	*β*	*B*	*SE B*	*β*
BV	.67	.10	.52***						
EV	.42	.07	.33***						
AV	-.36	.10	-.27**						
BV				.38	.08	.30***			
EV				.16	.05	.13**			
AV				-.24	.08	-.18**			
DN				.74	.05	.62***			
BV							.11	.06	.08
EV							.11	.04	.09*
AV							-.20	.06	-.15**
DN							.28	.05	.24***
EI							.70	.05	.64***

*** $p < .001$. ** $p < .01$. * $p < .05$.

Notes: AV = altruistic value orientation; BV = biospheric value orientation; EV = egoistic value orientation; DN = descriptive norm; EI = environmental self-identity; OM = obligation-based motivation.

APPENDIX G

SECOND STEPWISE REGRESSION ANALYSIS

Summary of Stepwise Regression Analysis for Variables Predicting Enjoyment-based Intrinsic Motivation (N = 317)

	Model 1			Model 2			Model 3			Model 4		
	EM			EM			EM			EM		
	B	*SE B*	*β*	*B*	*SE B*	*β*	*B*	*SE B*	*β*	*B*	*SE B*	*β*
BV	.50	.05	.49***									
BV				.16	.04	.15***						
IN				.71	.04	.68						
BV							.14	.04	.14**			
DN							.58	.05	.55***			
IN							.20	.05	.20***			
BV										.02	.04	.02
DN										-.03	.05	-.03
IN										.43	.05	.41***
EI										.44	.05	.49***

*** $p < .001$. ** $p < .01$.

Notes: BV = biospheric value orientation; DN = descriptive norm; IN = injunctive norm; EI = environmental self-identity; EM = enjoyment-based motivation.

APPENDIX H

Summary of Hierarchical Regression Analysis for Value Variables Predicting Obligation-based Motivation (OM) in Eco-friendly Apparel Purchasing Behavior (N = 317)

	Step 1 OM			Step 2 OM		
	B	*SE B*	*β*	*B*	*SE B*	*β*
Altruistic value	-.36	.10	-.27**			
Biospheric value	.66	.10	.52***			
Egoistic value	.42	.07	.33***			
Altruistic value				-.33	.11	-.25**
Biospheric value				.68	.10	.54***
Egoistic value				.44	.07	.35***
Hedonic value				-.10	.10	-.07
Adjusted R^2	.29			..29		
R^2	.30			.29		
F for change in R^2					1.10	

*** $p < .001$. ** $p < .01$.

APPENDIX I

Summary of Hierarchical Regression Analysis for Value Variables Predicting Enjoyment-based Motivation (EM) in Eco-friendly Apparel Purchasing Behavior (N = 317)

	Step 1 EM			Step 2 EM		
	B	*SE B*	*β*	*B*	*SE B*	*β*
Altruistic value	.10	.09	.10			
Biospheric value	.40	.08	.39***			
Egoistic value	.06	.06	.06			
Altruistic value				.08	.09	.07
Biospheric value				.39	.08	.37
Egoistic value				.04	.06	.04
Hedonic value				.09	.08	.07
Adjusted R^2	.24			..24		
R^2	.24			.25		
F for change in R^2					1.17	

*** $p < .001$. ** $p < .01$.

APPENDIX J

THIRD STEPWISE REGRESSION ANALYSIS

Stepwise Regression Analysis for Variables Predicting Obligation-based Intrinsic Motivation (N = 317)

	Step 1 OM			Step 2 OM			Step 3 OM			Step 4 OM			Step 5 OM		
	B	*SE B*	*β*	*B*	*SE B*	*β*	*B*	*SE B*	*β*	*B*	*SE B*	*β*	*B*	*SE B*	*β*
DN	.76	.60	.64***												
IN	.18	.07	.14**												
DN				.74	.65	.63***									
IN				.08	.07	.07									
BV				.22	.05	.18***									
DN							.73	.06	.62***						
IN							.09	.07	.07						
BV							.36	.08	.28***						
AV							-.19	.08	-.14*						
DN										.67	.06	.57***			
IN										.12	.07	.10			
BV										.35	.08	.23***			
AV										-.26	.08	-.19**			
EV										.17	.05	.14**			
DN													.32	.07	.28***
IN													-.14	.06	-.11*
BV													.12	.06	.09
AV													-.18	.06	-.14**
EV													.09	.04	.08*
EI													.75	.06	.68***

*** $p < .001$. ** $p < .01$. * $p < .05$.

Notes: AV = altruistic value orientation; BV = biospheric value orientation; EV = egoistic value orientation; DN = descriptive norm; IN = injunctive norm; EI = environmental self-identity; EM = enjoyment-based motivation.

APPENDIX K

FOURTH STEPWISE REGRESSION ANALYSIS

Summary of Stepwise Regression Analysis for Variables Predicting Enjoyment-based Intrinsic Motivation (N = 317)

	Step 1			Step 2			Step 3		
	EM			EM			EM		
	B	*SE B*	*β*	*B*	*SE B*	*β*	*B*	*SE B*	*β*
IN	.64	.05	.61***						
DN	.21	.05	.22***						
IN				.58	.05	.56***			
DN				.20	.05	.21***			
AV				.15	.04	.13**			
IN							.42	.05	.40***
DN							-.02	.05	-.02
AV							.07	.04	.07
EI							.43	.05	.48***

*** $p < .001$. ** $p < .01$. * $p < .05$.
Notes: AV = altruistic value orientation; DN = descriptive norm; IN = injunctive norm; EI = environmental self-identity; EM = enjoyment-based motivation.