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Product and Consumer Characteristics as Moderators of Consumer Response to Sustainable Products

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Dedication

This dissertation is dedicated to the mothers in my life. My strength and confidence comes from you. Throughout my life, you told me not to quit. You demonstrated how life should be lived. You taught me what it means to be a fighter. You encouraged my creativity and adventurous spirit. You have always been there for me, providing consolation and support even when circumstances made that challenging. At the end of the day, you have been the first to sing my praises and raise a glass in my honor. For this and so much more, I am forever grateful.

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Abstract

This dissertation consists of two essays. In both, product sustainability is broadly focused on the environmental and social performance (Luchs et al. 2010) of a product. The first essay explores the role of firm sustainability reputation in behavioral intentions for sustainable products. Additionally, this essay applies construal level theory (Liberman and Trope 1998; Vallacher and Wegner 1985, 1987) and addresses the situation that exists wherein sales of sustainable products produced by firms founded under sustainability principles are more stable than those produced by traditional firms (Clifford and Martin 2011). The second essay introduces a measure of consumer perceived product sustainability (CPPS) for food and beverage products. The impact of consumer perceptions of environmental and social performance on willingness to pay and purchase intentions is explored. Both consumer characteristics (i.e., construal level) and product characteristics (i.e., utilitarian versus hedonic product types) are studied as moderators.

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Introduction

65% of consumers indicate that they feel a "responsibility to purchase products that are good for the environment and society" (Bemporad, Hebard and Bressier 2012, pg. 23). 50% of consumers also indicate a willingness to pay premiums for products produced by socially responsible companies (Nielsen 2013). Managers and executives are implementing sustainability initiatives primarily in response to consumer demand (*MIT Sloan Management Review* and BCG 2013). However, both consumer and firm commitment to sustainability varies. As firms respond with sustainable products, consumers exhibit a lack of willingness to pay premiums and to purchase these products (Neff 2012). One of the challenges for consumers is an absence of diagnostic information in the marketplace. Currently, there is no objective measure of product sustainability, and consumers are left to rely on messaging, product labeling and independent certifications to assess product environmental and social performance.

Sustainability, "[meeting] the needs of the present without compromising the ability of future generations to meet their own needs," (WCED 1987) is a topic that has received increasing attention by consumers, investors, businesses, lawmakers and non-profit organizations. Consumers demand sustainable products. Government regulations lead to more sustainable practices. Non-governmental organizations push for the conservation of resources and the fair treatment of communities, workers and animals. Companies respond to consumer-stated preferences, government regulations (both

implemented and anticipated), expectations of non-governmental agencies, and opportunities to operate more efficiently and responsibly. As such, firm commitment and reputation for sustainable performance is varied. Examples of sustainability initiatives include the following: production of more environmentally-friendly and socially responsible products through the reduction of pollution and of packaging; elimination of waste and harmful chemicals; focus on the well-being of communities, workers and animals; sourcing of local goods; implementation of fair-trade initiatives; and recycling of products and by-products.

This dissertation consists of two essays. In both, product sustainability is broadly focused on the environmental and social performance of a product. The first essay examines the role of firm sustainability reputation (FSR) in determining behavioral intentions for sustainable products. Through the application of construal level theory (Liberman and Trope 1998; Vallacher and Wegner 1985; 1987), this essay addresses the situation that exists wherein sales of sustainable products produced by firms founded under sustainability principles are more stable than those produced by traditional firms (Clifford and Martin 2011). The second essay introduces a measure of consumer perceived product sustainability (CPPS) for food and beverage products. The impact of consumer perceptions of environmental and social performance on willingness to pay and purchase intentions is explored. Both consumer characteristics, construal level, and product characteristics, utilitarian versus hedonic product types, are studied as moderators. The conceptual model for both essays is presented in Figure 0.1.

Motivation for and Focus of Dissertation

This dissertation focuses on the key factors that impact consumer behavior, specifically willingness to pay and purchase likelihood, with respect to sustainable food products. Why food? There are a wide range of factors that influence product sustainability such as various environmental, economic and ethical considerations, including the welfare of consumers and communities. No single measure or indicator of product sustainability exists in the marketplace to guide a consumer. Therefore, perceptions of product sustainability are likely to vary across consumers and based on an individual's knowledge and expertise within a category as well as his values and beliefs. Given these complexities, it is useful to limit the domain being studied. Food provides a context that is relevant for all consumers. It is also the largest segment of the green product market (Neff 2012). Additionally, food well-being is an emerging topic (e.g., Block et al. 2011) and one of interest not only for academicians but for public policy as well.

Essay One

Sustainability is an important issue for consumers. People are aware of and express an interest in engaging in sustainable behaviors and purchasing sustainable goods. Consumers are motivated to purchase sustainable products due to concern for human health, animal welfare and the environment; desire to support the local economy; return to more traditional practices (c.f. Hughner et al. 2007); and perceptions of social status (Griskevicius, Tybur and Van den Bergh 2010). However, consumers do not respond equally to all sustainable products. While unfavorable marketing mix elements, such as price premiums, lack of availability, and limited assortment (Hughner et al.

2007), are frequently considered deterrents to purchase, there is no clear understanding of how a firm's reputation for environmental and social performance influences behavior nor of the individual differences that account for sustainable consumption.

Traditional approaches to identifying consumers that purchase sustainable goods, such as behavioral segmentation and demographic indicators, are not reliable predictors of sustainable product purchase. From a behavioral standpoint, consumers can be divided into indifferent, occasional and regular users of sustainable goods. However, the members of each behavioral segment are heterogeneous from a socio-demographic perspective (Hughner et al. 2007). People in each segment vary in terms of their commitment to sustainability (Bearse et al. 2009) as well as in their motivations (Hughner et al. 2007). Demographic variables are also unreliable predictors of sustainable consumption. People who purchase sustainable goods are not homogenous (Hughner et al. 2007). Evidence suggests that education, marital status, income and access impact purchase likelihood (Dimitri and Dettmann 2012). These findings are not consistently replicated across studies, however.

Given the lack of a clear predictor of behavior, researchers have shifted focus to psychographic explanations for sustainable purchase behavior. During the purchase decision-making process, both the environmental and social as well as functional product attributes are weighed (Auger et al. 2008). Even though multiple sustainable benefits may be present, consumers only attend to the factors that are most salient and important to them when selecting a product (Carrington, Neville and Whitwell 2012). Numerous scales have been developed to measure consumer attitudes toward and involvement with the environment and other sustainability dimensions [Table 0.1]. A person's values and

beliefs towards the environment (e.g. Bohlen, Schlegelmilch and Diamantopoulos 1993; Chatterjee and Kay 2010; Diamantopoulos et al. 2003; Lin and Chang 2012; Papista and Krystallis 2012; Schuhwerk and Lefkoff-Hagius 1995), social responsibility (Roberts 1991), and personal health (Gould 1990) have been shown to impact behavior.

Additionally, several higher-level models have been proposed to explain behavior in light of the various variables that are known to impact sustainable product attitudes and purchase. Vermeir and Verbeke (2006) propose that involvement, certainty, availability and perceived consumer effectiveness (PCE) impact attitudes towards sustainable products and consumer purchase intentions. Carrington, Neville and Whitwell (2012) explain behavior in terms of implementation intentions, actual behavioral control and situational context. Ramirez (2013) proposes a model that includes the variables outlined by Vermeir and Verbeke (2006) and extends it to address other marketer competencies, consumer benefits, consumer attitudes, and product considerations. The model proposed by Ramirez (2013) is broad enough to account for many factors that may be at work. However, there is no clear theoretical framework that explains which consumers purchase sustainable goods and why there may be variance across purchase occasions.

Research on the mental representation of sustainable behavior suggests a broader application of construal level theory (Liberman and Trope 1998; Vallacher and Wegner 1985; 1987). People create mental representations of sustainable behavior at either an abstract or concrete level (White, MacDonnell and Dahl 2011; Zanoli and Naspetti 2002). An individual's mindset, concrete versus abstract, may vary based on contextual factors, knowledge level within a particular domain, and difficulty of performing a task (Vallacher and Wegner 1985). The literature indicates that evaluation of a product and

subsequent purchase intentions depend on the match between consumer representations of sustainable behavior and the type of appeal (White, MacDonnell and Dahl 2011), promotion (Schuhwerk and Lefkoff-Hagius 1995) or existing associations (Torelli, Monga and Kaikati 2012) with a product. This research extends previous work and proposes that individual construal level acts as a determinant of behavioral intentions for sustainable products such that those in an abstract mindset exhibit greater willingness to pay and purchase likelihood for sustainable products than those in a concrete mindset.

Organizations also have a vested interest in pursuing sustainable activities. The pursuit of the "triple bottom line," people, planet, and profit, is now pervasive, as firms have realized the financial benefit of implementing environmental and ethical programs. Companies are responding not only to consumer-stated preferences for sustainable products, but they are also altering business practices to take advantage of efficiencies resulting from sustainable production, to minimize risk associated with resource constraints and government regulations, and to take advantage of financial and reputational benefits of strategies that consider the implications for the environment and society (*MIT Sloan Management Review* and BCG 2013). While firm performance on sustainability criteria may be difficult to evaluate and the benefits more abstract than those achieved through daily operating activities (Jayachandran, Kalaignanam and Eilert 2013), investors and other stakeholders value investments in sustainability initiatives. As a result, sustainability is important for firms as well as consumers, and firms stand to gain by being perceived as adhering to sustainable principles.

Despite the increased focus on sustainability by organizations and their stakeholders, commitment to sustainability varies across organizations. Similar to

consumers, firms fall on a continuum between taking a leadership role with respect to sustainability to merely complying with government regulations and implementing changes only when there is a clear economic benefit (Closs, Speier and Meacham 2011). Some firms even make the effort to have their environmental and social performance certified and become a B Corp, indicating that they meet stringent sustainability guidelines. Given the reputational benefits often afforded to companies by strong sustainability performance, some firms have misrepresented their impact on the environment and society. This practice, known as greenwashing, is similar to other situations, such as compliance with accounting laws, where firms stand to gain by misrepresenting their actions (Laufer 2003) and has resulted in consumer skepticism of performance claims.

These differences in firm sustainability reputation (FSR) are anticipated to impact how consumers evaluate the products produced by firms. Consumers have been shown to be more likely to engage in pro-environmental behavior when they perceive a company to be more transparent (Vaccaro and Echeverri 2010). In this essay, it is hypothesized that FSR interacts with construal level to determine willingness to pay and purchase likelihood for sustainable goods. Given the emphasis on sustainability and the introduction of new firms, brands and products with environmental and social benefits, it is important to understand how FSR impacts behavior. The present research proposes that individuals in an abstract mindset exhibit greater willingness to pay and purchase likelihood for sustainable product produced by firms high in FSR than those in a concrete mindset. The studies presented herein provide evidence of the hypothesized relationship between construal level and FSR.

Evidence from the economic downturn in 2008 indicates that the sales of sustainable products produced by firms formed based on sustainability principles were more resilient to unfavorable economic conditions than sustainable products produced by traditional manufacturers (Clifford and Martin 2011). This example provides practical evidence that there are firm-level differences that impact the purchase of sustainable goods. Essay One, using both construal level and FSR provides an explanation for why the variance of sales may have occurred between sustainable products produced by firms with a greater reputation for sustainability compared to those from traditional firms. Additionally, evidence is provided for the process through which the construal-FSR interaction impacts behavioral intentions.

Essay Two

While the first essay identifies both a consumer and firm level impact on sustainable consumption, the second fills a gap with respect to consumer perceptions of product sustainability. In general, people have a limited understanding of what sustainability comprises, and they only attend to the components that are important to them (Carrington, Neville and Whitwell 2012). There is evidence that perceptions of product sustainability impact behavior (Ewing, Allen and Ewing 2012; Gershoff and Frels 2013). However, there is no agreement as to an objective measure of sustainability. There is a general consensus that sustainability is comprised of environmental, ethical and economic dimensions. The lack of an objective measure of product sustainability in the marketplace makes it hard for consumers to compare sustainability performance across products and presents problems for researchers when testing consumer response to

sustainable offerings. The second essay develops a subjective measure of consumer perceptions of food sustainability and examines the impact of this measure on behavior.

Most commonly, sustainability is considered to be a multi-dimensional concept composed of environmental, ethical and economic elements (e.g. Blackburn 2007). However, due to a strong focus on the environmental performance of firms, sustainability has become almost synonymous with protecting the environment. In addition, the majority of the research in the marketing literature is focused on a single dimension of sustainability, usually the environment or corporate social responsibility (CSR) [Table 0.2]. Through the development of a 3-dimensional scale that measures consumer perceived product sustainability (CPPS), the present research examines the impact of CPPS on both willingness to pay and purchase likelihood.

The factors that influence sustainable product perceptions, purchase and use have been the source of much research. In particular, a focus has been placed on how sustainable products are evaluated and under what circumstances consumers are willing to pay more for an environmentally friendly and socially responsible option. Products that are considered green, for example, can suffer from negative product evaluations. This "sustainability liability" refers to the fact that sustainable products may be considered less effective than conventional products when product benefits conflict with the perceived gentleness of concern for the environment and society (Luchs et al. 2010). Additionally, research suggests that sustainable consumption may result in undesirable use behavior. Consumers tend to use more of a product when it promises environmental benefits (Lin and Chang 2012) and when recycling is available (Catlin and Wang 2012). Negative evaluations may arise, not only due to a mismatch between product attributes

and sustainability but also as a result of the way people represent sustainable behaviors mentally. Consumers may view the purchase of sustainable products in either abstract or concrete terms (Zanoli and Naspetti 2002). This mental representation impacts product evaluations, willingness to pay, purchase likelihood and the effectiveness of various appeal types. For example, evidence suggests that those who think more abstractly about the purchase of environmentally friendly products are more willing to pay to for sustainable goods (Laroche, Bergeron and Barbaro-Forleo 2001). Therefore, consumer construal level is thought to moderate the impact of perceived product sustainability on behavior. The present research proposes that CPPS has a significant positive effect on both willingness to pay and purchase likelihood for sustainable products for individuals in an abstract mindset but not those in a concrete mindset.

Also, the product type, utilitarian or hedonic, is considered as a factor in determining behavior consistent with previous suggestions in the literature (Peloza, White and Shang 2013). It is not immediately clear how product type will impact sustainable behavior. Consumers may choose to pay more and purchase a sustainable option when purchasing a hedonic product to offset guilt (Strahilevitz 1999) or to control behavior (Wertenbroch 1998). Alternatively, a sustainable hedonic product may be viewed as not providing the anticipated level of pleasure or indulgence as a conventional option. In such case, as explained later, the fit between the benefits provided by a utilitarian product and those associated with sustainability would lead to greater purchase intentions (Luchs et al 2010; Torelli, Monga and Kaikati 2012). As such, the type of product, utilitarian versus hedonic, is anticipated to impact willingness to pay and purchase likelihood of sustainable goods.

Conclusion

While sustainability has become a topic of growing interest for researchers in multiple disciplines, there is no clear measure of product sustainability or an understanding of how a firm's reputation for sustainable performance impacts consumer behavior with respect to sustainable goods. This is of significant importance to managers who are implementing sustainability initiatives primarily with customers in mind. Even though consumer-stated preferences for sustainable products indicate a sizeable opportunity for environmentally friendly and socially responsible products, marketers face the challenge of identifying and targeting consumers interested in sustainable products and promoting goods in a manner that motivates purchase. This dissertation addresses the consumer, firm and product characteristics that impact willingness to pay and purchase likelihood for sustainable products and offers a psychographic account for predicting sustainable consumption. Additionally, it proposes a measure of consumer perceived product sustainability. Product type is also introduced as a factor that influences consumer willingness to pay and purchase likelihood for sustainable food products. From a managerial perspective, this dissertation provides evidence of an individual characteristic, construal level, that can be manipulated and explain behavior across consumers of varying demographic backgrounds and knowledge, values and beliefs with respect to sustainability. In addition, the CPPS scale offers a tool for both managers and researchers to assess product perceptions on each dimension of sustainability.

This dissertation is structured as follows. The first essay (Chapter 1) examines the impact of a consumer's mental representation of sustainable behavior on willingness to

pay and purchase likelihood. In addition, the impact of FSR is examined. The second essay (Chapter 2) includes the development of a subjective measure of consumer perceived product sustainability for food and beverage items and examines the consumer and product characteristics that effect the relationship between CPPS and behavior.

Figures

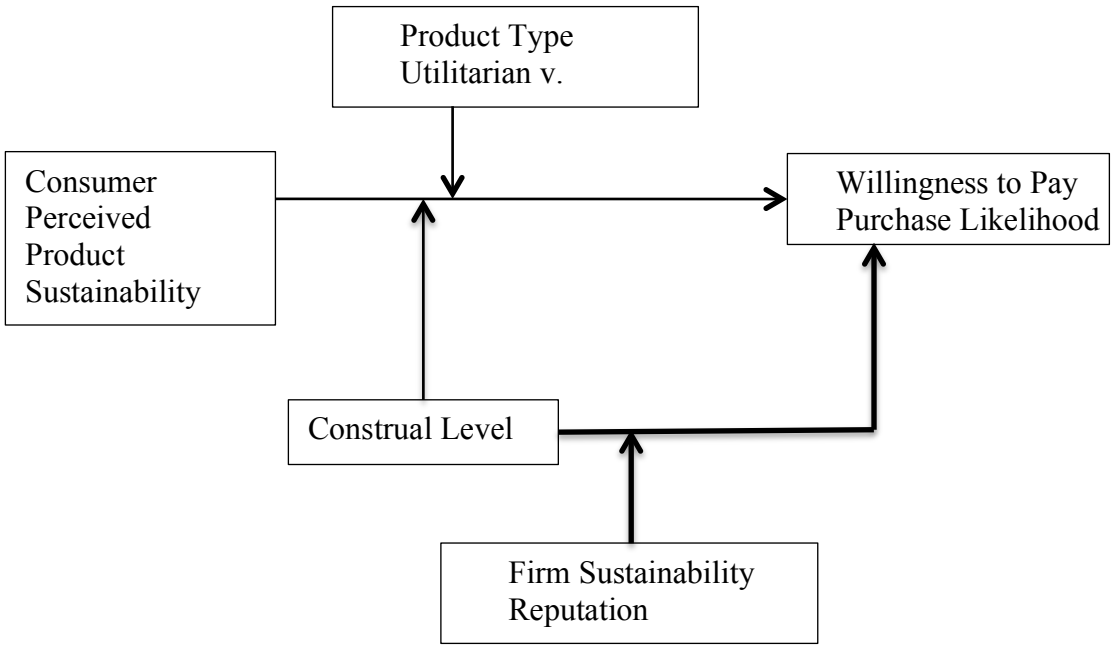

Figure 0.1: Conceptual Model for Dissertation Essays

Tables

Table 0.1: Examples of Sustainability Scales in the Literature

Scale	Authors	# Items	Dimensions
New Environmental Paradigm (NEP)	Dunlap and van Liere (1978)	12	(1) Environmental worldview
New Ecological Paradigm	Dunlap et al. (2000)	15	(1) Balance of nature (2) Limits to growth (3) Perceptions of man over nature
Environmental Consciousness	Bohlen, Schlegelmilch and Diamantopoulos (1993) Diamantopoulos et al. (2003)	45	(1) Knowledge of environmental issues (2) Attitude toward environmental issues (3) Non-purchasing environmental behavior (3a) Recycling (3b) Political action (4) Purchasing environmental behavior
Pro-environmental purchasing behavior	Schlegelmilch, Bohlen & Diamantopoulos (1996)	3	(1) Environmentally-friendly purchasing behavior
Self-report conservation scale (CONSERV)	Pickett, Kangun and Grove (1993)	9	(1) Recycling (2) Reuse (3) Conservation
Socially Responsible Consumption Behavior (SRCB)	Antil and Bennett (1979) Antil (1984)	40	(1) Socially responsible consumption
Socially Responsible Consumer Behavior (SRCB)	Roberts (1991)	40	(1) Socially responsible consumer behavior (2) Ecologically conscious consumer behavior
Ecologically Conscious Consumer Behavior	Roberts and Bacon (1997)	30	
Environmentally Responsbile Consumer (ECOSCALE)	Stone, Barnes and Montgomery (1995)	31	(1) Opinions and beliefs (2) Awareness (3) Attitude (4) Knowledge (5) Willingness to act (6) Action taken (7) Ability to act
GREEN Consumer Values	Haws, Winterich and Naylor (2010)	6	(1) Environmentally-friendly consumption values
Involvement with the Environment	Schuhwerk & Lefkoff-Hagius (1995)	4	(1) Involvement with the environment
Green Consumer Beliefs	Barr and Gilg (2007)	4	(1) Importance of health, safety and local concerns
Perceived Greenness	Ewing, Allen and Ewing (2012)	3	(1) Product greenness
Prerceived Greenness	Gershoff and Frels (2013)	4	(1) Product greenness

*44 items were used in this study

Table 0.2: Sample of Sustainability Related Literature

Key Topic	Authors	Sustainability Focus	Findings
Drivers of Consumption & Segmentation	Diamantopoulos et al. 2003	Green Products	Conducts a literature review and indicates that socio-demographic variables are considered good indicators of knowledge and attitude towards sustainable products but not of actual behavior.
	Carrington, Neville and Whitwell 2012; Ramirez 2013; Vermeir and Verbeke 2006	Sustainable Consumption	Introduce variables and develop models to attempt to explain the intentions-behavior gap.
	Vermeir and Verbeke 2008	Sustainable Food Consumption	Use the theory of planned behavior to examine the drivers of sustainable food consumption. Perceived ability to affect change and personal sustainability values impact the strength of common drivers of consumption.
	Zanoli and Naspetti 2002	Organic Food	Use a means-end approach to address purchase of organic products. There are differences in the knowledge of and experience with sustainable products across demographic groupings. Health is the primary association that consumers draw of organic products.
Sustainability Signaling	Ewing, Allen and Ewing 2012	Environmental Attributes (green)	The use of certification logos, indexical cue, versus packaging type, iconic cues, has a stronger positive impact on green beliefs and attitudes towards green products. Green beliefs mediate the relationship between cue type and attitude.
Appeal Type	Kidwell, Farmer and Hardesty 2013	Sustainability Behavior	The use of appeals consistent with one's political ideology increases fluency and subsequently impacts recycling intentions, green product purchase intentions and sustainable behavior.
	Peloza, White and Shang 2013	Ethical Attributes	Appeals focused on benefits to others versus self-benefit increase product preferences and purchase intentions by activating self-accountability. Anticipated guilt mediates the relationship between self-accountability and ethical product selection.
	Schuhwerk and Lefkoff-Hagius 1995	Environmental Attributes (green)	Ad effectiveness depends on a consumer's level of involvement with the environment. Low involvement consumers are more sensitive to appeal type (environmental claim versus cost-savings claim) than high involvement consumers and respond to environmental appeals with more favorable purchase intentions.
	White, MacDonnell and Dahl 2011	Recycling Behavior	Response to appeal type depends on a person's level of action identification. Loss frames are more effective in generating recycling behavior under low-level mindsets and grain frames are more effective under high-level mindsets due to increased processing fluency.
	White and Simpson 2013	Sustainable Behavior	The use of injunctive and/or descriptive norms influences people to act in a sustainable manner when the collective self is active. Self-benefit appeals are more effective when the individual self is activated.
Consumer Skepticism of Claims	Mohr, Eroglu and Ellen 1998	Environmental Impact	Consumers are skeptical of environmental claims made by firms. Develop a 4-item measure of skepticism to green marketing claims.
Brand Extension	Chatterjee and Kay 2010	Environmental impact (green)	The type of green claim (ingredient/packaging/other) impacts evaluations across green products. Brand extensions that are incongruent with existing brand associations activate persuasion knowledge, negatively impacting green extension evaluation.
Assortment, Price, Promotion	Bezawada and Pauwels 2013	Organic Food	The elasticity of price and assortment changes is greater for organic than conventional foods. Even regular consumers of organic products react to these actions.
Firm Commitment	Banerjee 2002	Environment	Develop the corporate environmentalism scale to assess the extent to which an environmental focus is integrated into corporate decision-making and strategy.
	Ramirez 2010	Sustainability	Develop the green market orientation scale.
Transparency	Dilling 2011	CSR (pro-environmental behavior)	The publication of annual sustainability report is a key determinant of stakeholder perceptions of environmental and social performance.
	Vaccaro and Echeverri 2010	CSR	Firm transparency is a key component to achieve customer support for CSR initiatives.
	Dando and Swift 2003	Sustainability	Performance measures need to be credible in order to engender trust and reduce skepticism. Third-party oversight can increase credibility.
Firm Reputation	Brown and Dacin 1997; El Ghoul et al. 2011; Luo and Bhattacharya 2006	CSR	CSR performance positively impacts firm reputation.
Firm Performance	Margolis et al. 2007	CSR	Meta-analysis reveals that corporate social performance has a small positive impact on financial performance. Financial returns vary based on type of activity being performed.
	Baker and Sinkula 2005	Environment	Develop an enviropreneurial marketing scale and show impact on new product success and market share.
	Bansal 2005	Sustainability	Develop a corporate sustainable development scale to measure firm performance.
	Jayachandran, Kalaignanam and Eilert 2013	CSR	Type of sustainability initiative differentially impacts firm financial performance. Reliable, meaningful information reduces skepticism of sustainability performance claims and improves financial performance. There is an asymmetry between the impact of positive performance and negative incidents.
	Trudel and Cotte 2009	Sustainability	There is an asymmetry between the magnitude of return to positive performance and the impact of negative incidents.
Sustainability Implementation & Supply Chain	Gershoff and Frels 2013	Environmental Attributes (green)	The way in which firms implement sustainability initiatives impact consumer purchase intentions. The centrality of features that a firm chooses to alter in an existing product impacts perceptions of greenness.
	Closs, Speier and Meacham 2011	Sustainability	Outline the dimensions of sustainability and discusses the levels of firm commitment. Also, highlights the importance of managing sustainability throughout the supply chain in order to achieve maximum efficiencies.

Chapter 1: Construal Level, Firm Sustainability Reputation and Sustainable Consumption

> Every consumer-package-goods category will soon have some kind of green alternative. 'Increasingly, it will be a choice between light green and dark green.' – Jeffrey Hollender, Seventh Generation (Neff 2009)

The market for environmentally friendly, socially responsible products continues to increase. In 2011, sales of "green" products in the United States topped $40 billion with over 70% of that amount coming from organic food (Neff 2012). Firms are responding to consumer stated preferences for sustainable options by introducing new products to the market and modifying existing offerings to reduce pollution, eliminate waste, and improve the societal and health impact of products. Consumers increasingly have a choice between sustainable products on the shelf. Sustainable products are those that feature positive environment and social attributes (Luchs, Naylor, Irwin and Raghunathan 2010). They include those products that are green or are environmentally friendly as well as those that are organic or made with natural ingredients and processes, and those that have a positive impact on both workers and animals. Sustainable products may be marketed by traditional firms, whose missions have not been centered on sustainability, or sustainable firms, whose founding principles are motivated by environmental and ethical considerations. A consumer's consideration set, therefore, may include conventional products, sustainable products from traditional firms, and sustainable products produced by sustainable firms. For example, a shopper seeking

chocolate chip cookies will encounter Chips Ahoy cookies, Back to Nature Chocolate Chunk Cookies from Kraft Foods Inc., and Newman's Own Organics Champion Chip Chocolate Chip Cookies.

During the economic downturn in 2008, sales of sustainable products from traditional firms declined while those from firms founded on sustainability principles held steady (Clifford and Martin 2011). This variance in performance suggests that firm sustainability reputation may play a role in determining behavior with respect to sustainable products. Despite the growing demand for and presence of sustainable goods, many consumers exhibit an unwillingness to pay premiums for these goods (Neff 2012) and purchases lag behind intentions. The extant literature on sustainable consumption explores a wide range of consumer motivations (e.g., Griskevicius, Tybur and Van den Burgh 2010; Hughner et al. 2007; Zanoli and Naspetti 2002), values and beliefs (e.g., Kidwell, Farmer and Hardesty 2013; Lin and Chang 2012; Schuhwerk and Lefkoff-Hagius 1995; Straughan and Roberts 1999), demographic characteristics (e.g., Schlegelmilch, Bohlen and Diamantopoulos 1996), and marketing actions (e.g., Bezawada and Pauwels 2013; Chatterjee and Kay 2010; Ewing, Allen and Ewing 2012; Hawley et al. 2012; Peloza, White and Shang 2013) that impact product evaluation, purchase and use. However, it is not clear based on prior research what accounts for the differences in sales of sustainable product witnessed during the recession. The present research proposes that firm sustainability reputation (FSR), or perceived commitment to environmental and social issues, impacts both willingness to pay and purchase likelihood for sustainable products. Further, construal level theory (Liberman and Trope 1998; Vallacher and Wegner 1985, 1987), the way in which a person mentally represents an

activity at either a concrete or an abstract level, is introduced as an individual characteristic influencing sustainable consumption. The interaction between construal level and FSR offers a potential explanation for both variance in willingness to pay and purchase likelihood across consumers as well as for the variance in performance of sustainable products witnessed during the recession.

The following research investigates three questions. First, *does construal level account for variance in green product willingness to pay and purchase across consumers*? This research proposes that a consumer who is in an abstract mindset, or focused on the big picture, is more likely to buy a sustainable product compared to one who is in a more concrete mindset, or focused on lower level attributes and the steps of purchase. Second, *does firm reputation for sustainability moderate the impact of construal level and influence willingness to pay and purchase likelihood*? The present research proposes that FSR, or the extent to which a firm has a reputation for positive environmental and social performance, influences the relationship between construal level and behavioral intentions such that those in an abstract mindset are willing to pay more for and are more likely to purchase a sustainable product when FSR is high versus low. This interaction may help explain the pattern observed during the 2008 recession where sales of sustainable products dropped for traditional firms and remained steady for firms with a stronger sustainability reputation (Clifford and Martin 2011), as those who construe an activity at a higher more abstract level are primarily interested in high FSR products and are less susceptible to contextual changes and social influence. Third, the mechanism through which construal level and FSR operate is explored. The conceptual model is displayed in Figure A.1.

The contribution to the marketing literature is as follows: First, this research provides an individual characteristic, construal level, which can be used to predict sustainable consumption. Second, the proposed model differentiates between sustainable products from a traditional firm and those produced by firms high in FSR. Support is provided for the assertion that there are differences in willingness to pay and purchase likelihood for sustainable products based on FSR. The experimental approach allows for the isolation of the process guiding this behavior. From a managerial standpoint, the present research indicates that marketers may be able to take actions to move consumers to a more abstract mindset in order to influence sustainable consumption.

Theoretical Background

Even though consumers indicate a preference for sustainable goods, purchases of these products lag behind expectations. Since firms are introducing sustainable products in response to consumer-stated demand, it is essential to understand the factors that impact the willingness to pay and purchase of these products. The intentions-behavior gap has been the source of mounting research (Carrington, Neville and Whitwell 2010; Ramirez 2013; Vermeir and Verbeke 2006). The extant research on sustainable product preference and purchase has focused on demographic factors as well as the values and beliefs that influence sustainable consumption. Attempts to predict behavior using demographic characteristics have been inconsistent (Diamantopoulos et al. 2003), and calls have been made for a psychographic approach to identify these consumers (Hughner et al. 2007).

There are both contextual and individual considerations (Barr and Gilg 2007; Ramirez 2013) that determine whether a sustainable product is purchased. Product

assortment and price are deterrents to the purchase of sustainable food (Bezawada and Pauwels 2012). Also, austere packaging (Hughner et al 2007), insufficient marketing (Hughner et al 2007), visual imperfections (Ott 1990; Thompson and Kidwell 1998), and the content of product labels (Ewing, Allen and Ewing 2012; Hawley et al. 2012) impact evaluations and purchase. Third party certifications and product claims provide information for consumers to identify sustainable options and are frequently the only indication that a product is sustainable.

While inadequate marketing mix elements may deter purchase, consumer values and beliefs with respect to health and sustainability may positively impact purchase. Involvement with sustainable consumption (Roberts and Bacon 1997; Vermeir and Verbeke 2006), level of environmental consciousness (Bohlen, Schlegelmilch and Diamantopoulos 1993; Dunlap et al. 2000), health consciousness (Gould 1990), and social influence (Talukdar and Lindsey 2012) effect the purchase of sustainable products. Regular consumers of organic food often cite fit with lifestyle as a motivation for purchase (Hughner et al. 2007). "All consumers associate organic products with health at different levels of abstraction" (Zanoli and Naspetti 2002, pp. 643). In general, there is a sense of self-benefit or value for society at large when purchasing sustainable goods. Given the variance in values, beliefs, motivations, and demographic characteristics of those who consume sustainable goods, the present research proposes that the level of mental abstraction is central to understanding consumer purchase of sustainable products, as focus shifts from primary product attributes at more concrete levels to secondary product attributes, such as sustainability, at more abstract levels (van Doorn and Verhoef 2011)

Construal Level

Construal theory indicates that the level of mental abstraction for a particular event impacts behavior (Liberman and Trope 1998; Vallacher and Wegner 1985, 1987). A person can mentally represent an activity at either low (concrete) or high (abstract) levels. At low levels, a person is focused on how an action is performed or the specific steps required to complete the action. At high levels of abstraction, focus is on why the activity is being performed or the overall meaning assigned to the action. Those who identify activities at higher levels are more stable in their behavior as it is rooted in a larger belief system, not just a series of steps (Vallacher and Wegner 1989). Individuals tend to strive for the highest level of abstraction that they can easily maintain (Vallacher and Wegner 1987).

The level at which an individual construes a particular activity, or action identification, is determined by a person's activity experience, activity context, and activity difficulty (Vallacher and Wegner 1987). Significant differences may exist in these antecedents across buying situations. Therefore, action identification levels are considered to be domain-specific and fluid. The theory indicates that a person will seek the highest identity available and adjust his actions until equilibrium between the highest identity and the least degree of difficulty in maintaining the activity is achieved (Sirdeshmukh, Singh and Sabol 2002). The atmosphere in which the activity is performed can shift the level of abstraction by emphasizing either the specific steps required to engage in the activity or the broader implications.

In the context of shopping for sustainable food and beverage products, a person is likely to have varying identification levels based on their awareness and knowledge of

issues related to sustainability. In addition, the often-limited availability, lack of assortment and higher prices of sustainable products (c.f. Hughner et al. 2007) impose a certain level of difficulty on the purchase of these goods. While construal levels can be driven by a particular situation, individuals who exhibit a general tendency to represent activities at a higher level will carry that propensity into most domains (Vallacher and Wegner 1989). Additionally, Freitas, Gollwitzer and Trope (2004) demonstrate that when an abstract mind-set is activated, it will carry over into unrelated tasks, suggesting that marketers can impact construal levels.

This has implications for the purchase of sustainable products, as those individuals who identify the purchase of sustainable products at a more abstract level are likely to place more emphasis on secondary attributes such as product sustainability during the purchase decision. The individual in an abstract mindset is focused on purchasing a product within a larger value system that is consistent with his goals (Trope and Liberman 2003). In this case, the sustainability-related attributes become a method to attain those goals and product desirability is emphasized (van Doorn and Verhoef 2011). For a low identifier in a more concrete mindset focus is on the steps to accomplish the activity, resulting in a focus on primary product attributes and feasibility (van Doorn and Verhoef 2011). Therefore, we propose that an individual in an abstract mindset will exhibit significantly greater willingness to pay and purchase likelihood for sustainable products than those in a concrete mindset.

H1a: Construal level significantly impacts willingness to pay for sustainable products such that individuals in an abstract mindset are

willing to pay more for sustainable products than those in a concrete mindset.

H1b: Construal level significantly impacts the purchase of sustainable products such that individuals in an abstract mindset are more likely to purchase sustainable products than those in a concrete mindset.

Firm Sustainability Reputation

Not all sustainable products are the same, however. There are numerous potential variations in the attributes or components that make a product sustainable and that may influence behavior. For example, raw materials may be sourced from suppliers focused on sustainability, the manufacturer may exhibit strong corporate citizenship, the packaging may generate less waste, and/or the product itself may be more environmentally friendly than other products when consumed. The present research focuses on the reputation of the manufacturing firm, which as an immutable aspect of the product, should be closely related to perceived product sustainability (Gershoff and Frels 2013; Sloman, Love and Ahn 1998). Due to the goal-oriented nature of green product consumption (Zanoli and Naspetti 2002) and the centrality of the manufacturing firm to an item, FSR is hypothesized to moderate the relationship between construal and both willingness to pay and purchase likelihood.

Sustainable firms and traditional firms differ primarily in their missions and the extent to which sustainability is incorporated as a central tenet of business objectives (Banerjee 2002; Ramirez 2010). Some firms focused on sustainability demonstrate their social and environmental performance by becoming a certified B Corp, which indicates a strong compliance with sustainability standard. Others merely comply with regulatory

requirements. Both sustainable and traditional firms, however, may offer sustainable products. Consumers motivated to purchase sustainable products may differ in the extent to which they view the product as fulfilling their consumption goals based on the reputation of the producing firm. At concrete levels, consumers should be less concerned with the sustainability performance of the manufacturing firm and sustainable product purchase decisions will be based on ease of procurement. Traditional firms are typically those offering branded products with a larger share of the market, which helps overcome some of the deterrents associated with sustainable product purchase such as lack of branding and advertising, limited availability, undesirable packaging, and associations with poor product quality (Hughner et al. 2007).

When there are multiple sustainable products available for comparison, the more ethical option is likely to be chosen in an effort to promote self-accountability and reduce anticipated guilt when a sustainability goal is active (Peloza, White and Shang 2013). At more abstract levels, the sustainability goal is more salient, and consumers would be concerned about overall product sustainability and not just specific product claims. Given that sustainable firms incorporate environmental and ethical considerations in their processes and operations, it is predicted that those in an abstract mindset are more likely than those in a concrete mindset to choose a sustainable product from a sustainable firm.

> **H2a:** FSR moderates the relationship between construal level and willingness to pay such that individuals in an abstract mindset are willing to pay more for sustainable products from sustainable firms than those in a concrete mindset.

H2b: FSR moderates the relationship between construal level and purchase likelihood such that individuals in an abstract mindset are more likely to purchase sustainable products from sustainable firms than those in a concrete mindset.

Perceived Benefit to Self and Benefit to Others

What is the mechanism underlying the hypothesized effects? The present research proposes that consumer perceived self-benefit and benefit to others mediate the relationship between construal level and both willingness to pay and purchase likelihood. Prior research has shown that self-benefit and other-benefit product positioning effect ethical behavior and sustainable product choice (Peloza, White and Shang 2013; Schuhwerk and Lefkoff-Hagius 1995; White and Peloza 2009). Additionally, self-benefit and benefit to others mediate the relationship between activation of individual versus collective self and purchase intentions (White and Simpson 2013). White, MacDonnell and Dahl (2011) also demonstrate that construal levels can impact the effectiveness of loss versus gain-framed appeals. Extending the extant literature, the present research focuses on consumer perceptions of product self-benefit and other-benefit when evaluating a product.

Consistent with White and Peloza (2009) self-benefits are conceptualized as having tangible and intangible value that accrues to the person purchasing a product. Alternatively, other-benefits are those that result in value for another individual or group. In the context of sustainable food products, self-benefits may include the taste of the product, a consumer's anticipated level of enjoyment, and the impact of the product on consumer health. Given that sustainability is most often associated with an environmental

focus, other-benefits may center on a product's impact to pollution, waste, as well as animals and plant life. Self-benefit and other-benefit are proposed to mediate the relationship between construal level and both willingness to pay and purchase likelihood.

H3a: The effect of construal level on willingness to pay is mediated by perceived self-benefit and other-benefit.

H3b: The effect of construal level on purchase likelihood is mediated by perceived self-benefit and other-benefit.

Studies

The following studies are in the food and beverage domain. Why food? There are a wide range of factors that influence product sustainability, including various environmental, ethical and economic considerations. No single measure or indicator of product sustainability exists in the marketplace to guide a consumer. Therefore, perceptions of product sustainability are likely to vary across consumers based on an individual's knowledge and expertise within a category. Given these complexities, it is useful to limit the domain being studied. Food and beverage provides a context that is relevant for all consumers. It is also the largest segment of the green product market (Neff 2012). Food well-being, which assumes a more holistic view of role of food, is also an emerging topic (e.g., Block et al. 2011) and one of interest not only for academicians but for public policy as well.

Two studies centered in the food domain are presented as evidence of the hypothesized relationships. Study 1 examines the relationship between construal level and behavioral intentions by manipulating both product sustainability and construal level.

Study 2 tests the moderating role of FSR and the mediating mechanism through self- and other-benefit. In both studies, we find support for the hypothesized relationships.

Study 1

This study is designed to test the impact of construal level on willingness to pay (H1a) and purchase likelihood (H1b) for sustainable products.

Participants. One hundred thirty-eight students (46% female) took part in the study in the behavioral lab at a major university in the United States. The study employed a 2 (product sustainability: conventional v. sustainable) x 2 (construal: concrete v. abstract) between subjects design with four product replicates (potato chips, milk, bananas, and black beans). These products were chosen as they were considered relevant for a student sample and covered a range of product categories, including snack foods, beverages, fruit and canned goods.

Procedure. Survey participants were randomly assigned to one of the four conditions. Construal level was manipulated using procedures adapted from Freitas, Gollwitzer and Trope (2004). Participants read a paragraph about representing actions in terms of how (concrete) or why (abstract) they engage in an activity and then completed three free response items indicating how or why they "buy groceries" [Table A.2]. Next, participants were exposed to each of the four products. Product sustainability was manipulated using the USDA Organic logo and the word "Organic" on the packaging. This is consistent with previous research where product labeling is manipulated to signal product greenness (e.g. Ewing, Allen and Ewing 2012) and sustainability (e.g. Vermeir and Verbeke 2006). Also, based on a pretest of 256 students (64% female) in the behavioral lab at a major university, participants identify a gallon of milk containing the

USDA organic seal and the word "Organic" as more sustainable than the same container without those indicators.[1]

After viewing each product, participants then responded to the primary DVs, purchase likelihood and willingness to pay. Willingness to pay was measured using a sliding scale ranging from $0 to $10. Purchase likelihood was measured using the 3-item measure employed by White and Peloza (2009). Finally, participants indicated their liking of each product, responded to a number of values, beliefs and trait questions, and completed demographic information.

Results. A 2 (product sustainability: conventional v. sustainable) x 2 (construal: concrete v. abstract) between subjects ANOVA with 4 product replicates (product: potato chips, milk, bananas, black beans) indicates that there are no significant interactions between the products and product sustainability or construal level. Therefore, responses were collapsed across the product replicates for subsequent analysis. Observations where participants indicated a willingness to pay of zero dollars were removed resulting in a combined sample with 475 observations.

Willingness to Pay. A 2 (product sustainability: conventional v. sustainable) x 2 (construal: concrete v. abstract) ANOVA on willingness to pay indicates that the product sustainability-construal interaction is not significant ($F(1, 471) = .85$, *n.s.*). Both those in a concrete mindset ($M_{CONCRETE,\ CONVENTIONAL\ PRODUCT} = \$2.24$; $M_{CONCRETE,\ SUSTAINABLE\ PRODUCT} = \$2.57$; $t(230) = 2.07$, $p < .05$) and those in an abstract mindset ($M_{ABSTRACT,}$

[1] A 3-item ad hoc universal measure of sustainability measured on a 7-point scale (1 = "Strongly Disagree," 7 = "Strongly Agree") was used to measure perceived product sustainability. The items included "This milk is an environmentally friendly product;" "This milk is a green product;" and "This milk is a socially responsible product." The reliability for these items was acceptable with alpha = .94. A one-way ANOVA of product condition on the universal sustainability measure reveals a significant effect of product labeling ($F(1, 254) = 115.02$, $p \leq .00$). The means by product type are as follows: M(sustainable labeling) = 4.85, M(no sustainable labeling) = 3.24.

$_{\text{CONVENTIONAL PRODUCT}}$ = \$2.39; $M_{\text{ABSTRACT, SUSTAINABLE PRODUCT}}$ = \$2.93; t(241) = 3.40, $p \leq$ .00) are willing to pay significantly more for the sustainable products than they are for the conventional products. However, the mean difference in willingness to pay for sustainable products between those in an abstract mindset and those in a concrete mindset is significant and in the hypothesized direction ($M_{\text{CONCRETE, SUSTAINABLE PRODUCT}}$ = \$2.57; $M_{\text{ABSTRACT, SUSTAINABLE PRODUCT}}$ = \$2.93; t(236) = 2.08, $p < .05$). The mean difference between those in a concrete mindset and those in an abstract mindset for conventional products is not significant, indicating that there is not a general predisposition for individuals in an abstract mindset to exhibit greater willingness to pay for all products. H1a is supported.

Purchase Likelihood. A 2 (product sustainability: conventional v. sustainable) x 2 (construal: concrete v. abstract) ANOVA on purchase likelihood indicates a significant product sustainability-construal interaction (F(1, 471) = 3.52, $p < .10$). As hypothesized, those in an abstract mindset are significantly more likely to purchase the sustainable products than those in a concrete mindset ($M_{\text{CONCRETE, SUSTAINABLE PRODUCT}}$ = 3.56; $M_{\text{ABSTRACT, SUSTAINABLE PRODUCT}}$ = 3.99; t(236) = 1.79, $p < .10$). There is no significant difference in purchase likelihood between individuals in a concrete mindset and those in an abstract mindset for the conventional products indicating that there is not a general tendency for individuals in an abstract mindset to exhibit purchase likelihood for all products. H1b is supported.

Discussion of Results. Consistent with H1a and H1b, Study 1 provides evidence that individuals in an abstract mindset exhibit greater willingness to pay and purchase likelihood for sustainable products than those in a concrete mindset. The study also

suggests that the findings are generalizable across a range of frequently purchased food and beverage products. The next study focuses in on sustainable products and examines the role of firm sustainability reputation in behavioral intentions.

Study 2

Study 2 is designed to test the moderating role of FSR (H2) on consumer willingness to pay and purchase likelihood for sustainable goods. In addition, the mediating role of perceived self-benefit and benefit to others (H3) is examined.

Participants. One hundred thirty-three adults (51% female) took part in the study using Amazon Mechanical Turk (MTurk). MTurk was chosen due to the ability to gather data from a large, adult sample in a timely fashion. MTurk samples have been shown to be more diverse than and as reliable as student samples (Buhrmester, Kwang and Gosling 2011). The study employed a 2 (construal: concrete v. abstract) x 2 (FSR: low v. high) between subjects design. After removing participants that failed the quality check, indicated a complete dislike of milk (the focal product), and/or indicated a willingness to pay of zero dollars, 122 observations remained.

Procedure. Participants completing the online survey were randomly assigned to one of the four conditions. Construal was manipulated using a similar procedure described in Study 1. After completing the construal manipulation, participants read a description of the firm producing the milk to be shown (Lin and Chang 2012). For low FSR, participants read, "T.G. Lee is a manufacturer of quality milk products. They are committed to producing quality branded dairy products." For high FSR, they read, "T.G. Lee is a manufacturer of quality milk products. They are committed to producing

environmentally friendly, socially responsible dairy products." A two-item measure of FSR [Table A.2] was used as a manipulation check.

Next, participants were exposed to the image of a gallon of milk. Product sustainability was signaled in the same way as in Study 1. Participants responded to the primary DVs, purchase likelihood and willingness to pay. Additionally, participants responded to 3-items measuring self-benefit and 3-items measuring other-benefit. The scale items for each of these measures are reported in Table A.2.

Manipulation Check. A one-way ANOVA on the summed score of the two-item FSR measure (r = .86) indicates a significant main effect of FSR ($F(1, 120) = 25.92$, $p \leq .00$), with firms in the high FSR condition scoring higher on this measure. Tests for crossover effects (Perdue and Summers 1986) between both manipulated variables, construal and FSR, reveal no significant interactions.

Willingness to Pay. A 2 (construal: concrete v. abstract) x 2 (FSR: low v. high) between subjects ANOVA provides support for H2a with a marginally significant construal-FSR interaction ($F(1, 120) = 2.94$, $p \leq .10$) [Figure 1.1]. Consistent with H2a, participants in an abstract mindset are willing to pay significantly more for a sustainable product when FSR is emphasized than participants in a concrete mindset ($M_{CONCRETE, HIGH\ FSR} = \$3.15$ $M_{ABSTRACT, HIGH\ FSR} = \$3.63$, $t(61) \leq .05$). Additionally, individuals in an abstract mindset are willing to pay significantly more a sustainable product when FSR is made salient than when it is not ($M_{ABSTRACT, LOW\ FSR} = \$3.23$ $M_{ABSTRACT, HIGH\ FSR} = \$3.63$, $t(62) \leq .05$). Despite participants in a concrete mindset indicating a greater willingness to pay for the low FSR product than participants in an abstract mindset, this mean difference is not significant ($M_{CONCRETE, LOW\ FSR} = \$3.49$ $M_{ABSTRACT, LOW\ FSR} = \$3.23$, $t(57) = .48$).

There is no significant difference between the low and high FSR conditions for participants in a concrete mindset. These results indicate that FSR is an important factor in determining willingness to pay for consumers in an abstract mindset.

Purchase Likelihood. A 2 (construal: concrete v. abstract) x 2 (FSR: low v. high) between subjects ANOVA on purchase likelihood also supports H2b with a marginally significant construal-FSR interaction ($F(1, 118 = 3.58, p \leq .10$) [Figure 1.2]. Participants in an abstract mindset indicate a significantly greater purchase likelihood for the sustainable product when FSR is emphasized than participants in a concrete mindset ($M_{CONCRETE, HIGH\ FSR} = 4.09\ M_{ABSTRACT, HIGH\ FSR} = 4.98, t(61) < .05$). The difference in purchase likelihood for participants in an abstract mindset between the low and high FSR conditions is marginally significant ($M_{ABSTRACT, LOW\ FSR} = 4.42\ M_{ABSTRACT, HIGH\ FSR} = 4.98, t(62) \leq .10$). There is no difference across FSR conditions for participants in a concrete mindset. These results mirror those for willingness to pay and suggest that FSR is an important element of sustainable purchase decisions for individuals in an abstract mindset but not those in a concrete mindset.

Mediation. Self-benefit and other-benefit are tested as potential parallel mediators using a bootstrapping method (Preacher and Hayes 2008; Zhao, Lynch and Chen 2010). Construal has a significant positive effect on self-benefit ($t = 2.16\ p < .05$) but not on other-benefit. For willingness to pay, self-benefit has a significant positive effect ($t = 2.96, p \leq .00$). There is a significant indirect effect of construal on willingness to pay through self-benefit (effect = .12; 95% CI [.03, .28]). Self-benefit also has a significant positive effect on purchase likelihood ($t = 7.17, p \leq .00$). There is a significant indirect

effect of construal on purchase likelihood through self-benefit (effect = .91; 95% CI [.07, 1.87]). The results provide support for H3a and H3b.

Study 2 also allows for the testing of moderated mediation. The construal-FSR interaction has a significant positive effect on self-benefit ($t = 2.35$, $p < .05$). Self-benefit has a significant positive effect on willingness to pay ($t = 2.64$, $p \leq .00$). There is a significant conditional indirect effect of construal on willingness to pay through self-benefit in the high FSR condition (effect = .23; 95% CI [.07, .45]) and a significant indirect effect of the construal-FSR interaction on willingness to pay (effect = .24; 95% CI [.04, .52]). For purchase likelihood, self-benefit has a significant positive effect ($t = 6.79$, $p \leq .00$). There is a significant indirect effect of construal on purchase likelihood through self-benefit in the high FSR condition (effect = 1.81; 95% CI [.52, 3.45]) and a significant indirect effect of the construal-FSR interaction on purchase likelihood (effect = 1.90; 95% CI [.28, 3.87]). These results indicate that there is moderated mediation through self-benefit when firms are perceived as having a reputation for sustainable performance.

Discussion of Results. Study 2 supports H2a and H2b, indicating that the construal-FSR interaction has a significant effect on both willingness to pay and purchase likelihood. Participants in an abstract mindset indicate a greater willingness to pay and purchase likelihood for a sustainable product when the firm's reputation for sustainability is emphasized than participants in a concrete mindset. Additionally, those in the abstract condition are willing to pay more and are more likely to purchase a sustainable product when FSR is high than when FSR is low. H3a and H3b are also supported, and moderated mediation appears to exist through self-benefit when FSR is high. Other-benefit does not

have a significant effect for either of the DVs. This suggests that consumers may be motivated by their own gains rather than concern for the environment when purchasing sustainable products in the food and beverage domain.

General Discussion

While a majority of consumers express a desire to purchase sustainable goods, behavior falls short of intentions. As firms introduce products that are environmentally friendly and socially responsible, it is important for marketers to understand the factors that influence the purchase of these goods. The present research provides support through two studies that construal level influences willingness to pay and purchase likelihood for sustainable food and beverage products. Moreover, there is a significant interaction between construal and FSR. Consumers who think about a shopping activity in terms of why they engage in it exhibit greater willingness to pay and purchase likelihood for sustainable products when FSR is high versus low. These findings suggest that firms known for sustainability performance may have an advantage over traditional firms that introduce sustainable goods.

Studies 1 and 2 also provide support for perceived self-benefit being the mechanism through which construal and FSR impact willingness to pay and purchase likelihood. Somewhat surprisingly, other-benefit does not significantly influence either dependent variable. This suggests that firms may benefit more from focusing on benefits to consumers in the food and beverage domain rather than the environmental and social implications of product sustainability. There may be boundary conditions to these findings, such as product type, that deserve further investigation.

Theoretical Implications

The present research makes three main contributions to the literature. First, it extends the body of research on sustainable consumption and offers a psychographic explanation for consumer purchase of sustainable products. As evidenced in the marketplace, even the most ardent supporters of sustainability do not exhibit consistent purchase behavior across products and buying situations. Construal level helps explain why consumers may try environmentally friendly, socially responsible products; why behavior may change over time; and why behavior may vary across products. Sustainable behavior may vary due to changes in action knowledge, context and difficulty. Construal level theory could prove instrumental in understanding why behavior varies even when a person exhibits an inclination towards these goods and when there are strong marketing mix elements.

Second, the distinction is made between sustainable products produced by firms with a strong reputation for sustainability and traditional firms. The present research is one of the first to differentiate between sustainable products based on the characteristics of the firm. Third, Study 2 provides evidence that not all sustainable products are equal in the minds of consumers and that willingness to pay and purchase likelihood for sustainable food items vary based on FSR. Where FSR is emphasized, consumers in an abstract mindset exhibit greater willingness to pay and purchase intentions. Additionally, perceived self-benefit and other-benefit are introduced as the process through which construal and FSR impact behavioral intentions for sustainable goods.

Implications for Practice

The role of construal level and FSR in determining sustainable product purchase is an area of opportunity for marketers. Construal levels can be manipulated and influenced. Firms may be able to prompt consumers to assume higher level identities by stimulating them to think about the meaning behind purchasing an item. Through sustainability education, product information, and improved marketing, firms may also be able to reduce the difficulty of purchasing sustainable products and influence behavior by embedding the activity in a greater value system. Moving consumers to a more abstract construal may help stimulate trial and repeat purchase of sustainable goods. Additionally, the results suggest that manufacturers may benefit from highlighting firm sustainability performance directly to consumers. Overall, the present research provides evidence of both an individual and a firm-level characteristic that marketers may be able to influence to impact sustainable consumption.

Directions for Future Research

The current findings suggest that consumer perceived benefits effect the purchase of sustainable products and that self-benefit, not benefit to others, influences purchase likelihood and willingness to pay. Somewhat surprisingly, other-benefit does not significantly impact either variable. This suggests that it may be advantageous to firms to focus on benefits to consumers (Ramirez 2013) rather than the environmental and social gains of sustainable products. However, the use of self-benefit versus other-benefit appeals need to be explored more carefully, as prior research indicates that there may be contextual differences that lead to one having more influence than the other (Peloza, White and Shang 2013; White and Peloza 2009). Additionally, this phenomenon of self-

benefit carrying the most weight may be limited to the food and beverage domain, in which normative expectations of nutrition and health overshadow a more holistic view of these products (Block et al. 2011).

Overall, the present research provides both a consumer and firm characteristic that influence sustainable consumption behavior. The findings presented also offer an explanation for the phenomenon witnessed during the 2008 recession. Individuals in an abstract mindset appear to prefer sustainable products from firms with a strong sustainability reputation, while those in a concrete mindset tend more towards those from traditional firms. As individuals encountered economic difficulty, those in a more concrete mindset may have adjusted buying behavior and shifted towards conventional products which tend to be priced lower than sustainable products. Meanwhile, those who identify activities at a more abstract level, tend to be more stable in their behavior even when they encounter difficulty, resulting in the sales of products from sustainable firms holding steady.

Chapter 1 Figures

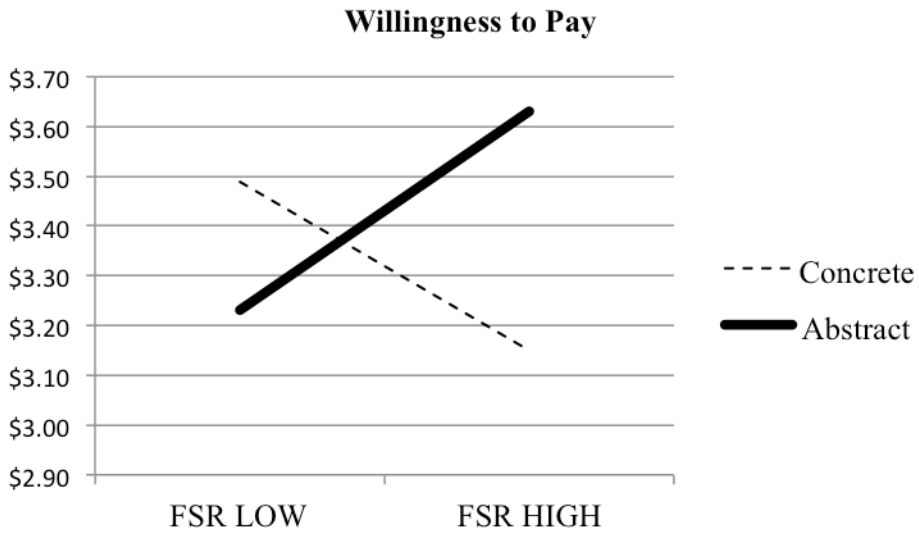

Figure 1.1: Construal Level-FSR Impact on Willingness to Pay

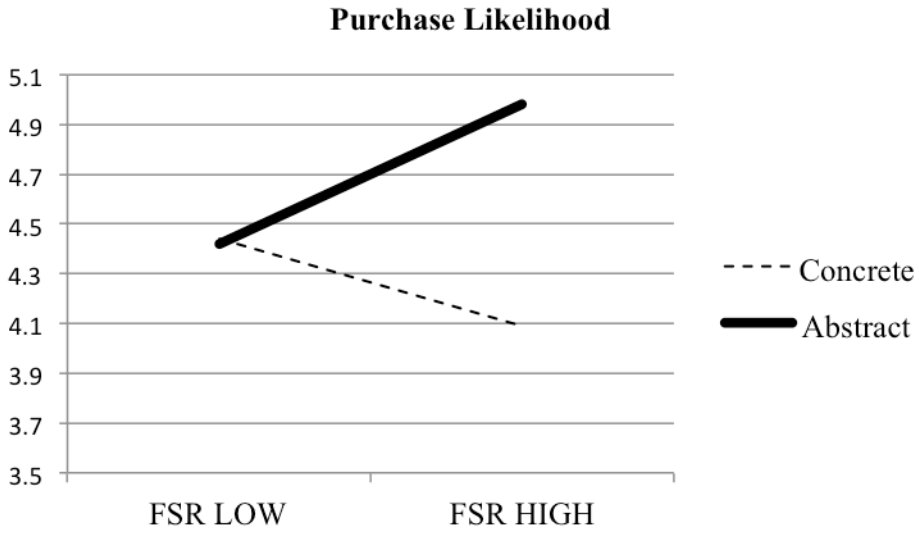

Figure 1.2: Construal Level-FSR Impact on Purchase Likelihood

Chapter 2: Consumer Perceived Product Sustainability

The past few years have witnessed a substantial change in the level of interest in sustainable products among consumers. Sustainable products are those that promote "positive social and environmental ethical principles" (Luchs, Naylor, Irwin, and Raghunathan 2010, p. 18). A majority of consumers indicate a desire to purchase sustainable goods (Bemporad, Hebard and Bressier 2012). They may even pay higher prices for sustainable products, and be more loyal to products from such firms (Peloza, Loock, Cerruti, and Muyot 2012). Firms have also been catering to the growing demand for sustainable products, aside from touting sustainability in their business practices. However, product sustainability as offered by firms can vary considerably, with the continuum ranging along the dimensions of how the product affects the natural environment and how labor is treated during the manufacturing process to the type of ingredients that go into making the product. Thus, product sustainability is a complex concept to consumers who are frequently unable to identity what constitutes sustainability (Carrington, Neville and Whitwell 2012).

Interestingly, consumers are not purchasing sustainable products at a rate consistent with their stated preferences (Neff 2012). Consumer purchase rates for sustainable products fall well behind the interest expressed in purchasing them. There could be several reasons for the mismatch between the attitudes that consumers express

towards sustainable products and their consumption behavior. Higher prices and limited distribution could prevent consumers from buying sustainable products (Luchs et al. 2010). In addition, one reason could be the confusion in identifying sustainable products because of the complexity of the concept. Consumers and other stakeholders have limited ability and motivation to scrutinize information about sustainability claims, and thus have low levels of knowledge about sustainability (Peloza et al. 2012). From the perspective of marketing managers and researchers, there is a clear need to measure consumer perceptions of sustainability.

Given the complex nature of the sustainability concept, it would be unrealistic to expect a universal measure of sustainability across all products. Quite intuitively, sustainability as applied to a consumer durable product or an industrial product would be very different from sustainability in the context of a food product. As such, in this manuscript, we focus on measuring consumer-perceived sustainability of products in one category – food and beverages. We focus on the food domain because it represents the largest segment of the green product market (Neff 2012) and thus, possibly, of the sustainable product market. The sustainable food product market is also of increasing importance, given the obesity epidemic and the focus on food well-being (Block et al. 2011).

What is important to consumers who seek out sustainable food products? Do consumers look merely at the "green" qualities of a product, the extent to which it is environmentally friendly? Or do they consider other aspects when they evaluate food products that are promoted as sustainable? We consider these issues in developing the consumer perceived product sustainability scale (CPPS) for food and beverages. Through

a detailed scale development process, we find that CPPS has three dimensions – real, welfare, and environment. *Real* pertains to the degree to which the product is not artificial. *Welfare* assesses the degree to which the welfare of workers and local community is considered in manufacturing the product. *Environment* measures the impact of the product on the natural environment. After assessing the psychometric properties of the scale, we use it to examine how CPPS affects consumer purchase intentions of sustainable food products. Across three studies, we find evidence that there is a positive relationship between CPPS and both willingness to pay and purchase likelihood. Additionally, there is a significant interaction between CPPS and construal level, such that those in an abstract mindset exhibit greater willingness to pay and purchase likelihood as CPPS increases, but this effect does not exist for those in a concrete mindset.

The remainder of this essay is organized as follows. First, we discuss prior research related to measuring sustainability and explain why a measure is needed for this construct. Then, we explain the dimensional structure of the CPPS scale. Next, the hypothesized behavioral outcomes of CPPS are introduced. Finally, consumer construal level and product type, utilitarian versus hedonic, are proposed to moderate the impact of CPPS on both willingness to pay and purchase likelihood.

Consumer Perceived Product Sustainability

Sustainability presents considerable opportunity for firms based on consumer-stated preferences for products that are natural, environmentally-friendly and socially responsible. However, purchase behavior significantly lags behind intentions, leaving managers and researchers looking for a better understanding of the factors that influence

behavior. A necessary step, therefore, is to have a clear understanding of consumer perceptions of product sustainability. The importance of clear measures of sustainability is highlighted by efforts such as those pursued by *The Sustainability Consortium* spearheaded by *Walmart* with the purpose of developing reliable indicators of product sustainability (www.sustainabilityconsortium.org). However, measuring product sustainability has not proved easy. There are a myriad of considerations from the sourcing of raw materials to the production, distribution, use, and disposal of a product that need to be accounted for in measuring product sustainability.

Sustainable products are credence goods whose attributes cannot be readily observed by consumers. Credence goods have qualities that the consumer cannot easily assess, important though they might be in the purchase decision (Darby and Karni 1973). For such products, consumers may not be in a position to ascertain quality even after purchase and use. Since product sustainability is not readily observable, consumers must rely on indexical and heuristic cues as well as manufacturer claims to determine the extent to which a product is sustainable. The effort made by consumers to assess product sustainability is not made easy by the hundreds of certifications available across product domains (Peloza et al. 2012). Further complicating an assessment of consumer perceptions of sustainability is that there are several related concepts that often appear to be interchangeably employed. The terms that are most commonly used in this regard are organic and environmentally friendly or green. As such, sustainability has different meanings to different people. In general, consumers tend to focus on the attributes that are most important to them (Carrington, Neville and Whitwell 2012) when making a purchase decision. Given the lack of diagnostic information relative to firm and product

sustainability and the abstract nature of the topic, it is important to understand the different aspects of sustainability that consumers focus on and how they affect their behavior. Next, we examine the dimensions of consumer perceptions of product sustainability.

Dimensions of Consumer Perceived Product Sustainability

As in prior research, we define sustainable products as those with positive environmental and ethical attributes (Luchs et al. 2010). Evidence from practitioner journals also indicates that environmental and social concerns are central to most definitions of sustainability (Montiel and Delgado-Ceballos 2014). However, from a consumer standpoint, there is a lack of understanding of what constitutes a sustainable food product. The media, activist groups and government regulations influence what consumers consider sustainable. Recent emphasis on genetically modified organisms (GMOs), preservatives, artificial ingredients, pesticide use, and animal cruelty has consumers searching for products that are non-GMO, all natural, organic and so on.

Given the lack of certainty of what constitutes sustainability, it is essential to understand whether or not consumers perceive a product to be sustainable prior to making inferences related to sustainable consumption behavior. Consumer perceptions are especially important for marketers as they launch new products targeted towards those who desire sustainable goods. It is also important to place the concept of sustainability against similar concepts such as all natural and organic. Do consumers see these concepts as the same? Given the gap between consumer-stated demand and purchase behavior with respect to sustainable products, it is plausible that consumers do

not view the products marketed as sustainable as bearing positive environmental and social characteristics.

To understand the contours of the sustainability concept as it is related to food products and also to distinguish it from related concepts such as organic and green, we conducted qualitative interviews with consumers. Seven participants between the ages of 28 and 65 (86% female) responded to a questionnaire related to their perceptions of sustainable food. The questionnaire, which contained seven questions, and direct quotes from the respondents are detailed in Appendix B and Table B.1. We also reviewed related literature in marketing and other fields. In conducting these interviews and reviewing the literature, it was important to understand why consumers buy organic, green, or sustainable products. What factors influence their decision-making in regard to such food products? Based on our literature review and consumer interviews, we developed a better understanding of how these terms are related and how they are different. Since these terms are frequently used and sometimes used interchangeably, it is important to understand how they map on to each other prior to defining our measure of CPPS. Our findings are summarized below for each of the related terms – green (i.e., environmentally-friendly), organic, and sustainable.

Green: Green food products are those that are produced with a view to reducing the negative impact on the natural environment. The interest in green food products rose with the concern about the environmental impact of the production, processing, distribution and consumption of these goods. During the lifecycle of a product, potentially damaging effects may occur to the environment, including the pollution and use of water, energy consumption, waste production, production of chemicals that impact

global warming, and other potentially harmful effects (Foster et al. 2006). A product's greenness, therefore, may be associated with a sense of being natural and not being wasteful (Ewing, Allen and Ewing 2012). Given the focus on the environmental aspects of sustainability, in both the mind of the consumer and recent literature (e.g., Lin and Chang 2012), green and sustainable have been used somewhat interchangeably.

Organic: Organic food products technically are those associated with organic methods of farming. While definitions of what constitutes an organic product vary, there is a focus on crop rotation practices and the preservation of biodiversity, use of natural fertilizers and pesticides, and avoidance of GMOs, antibiotics and growth hormones (USDA 2014). Organic, however, does not necessarily indicate that a product is environmentally friendly. While pesticide use and energy consumption may be lower for organic foods, in some cases, the production of these products may have more significant effects on water sources and land use, for example, than those arising from non-organic foods (Foster et al. 2006). As such, it is not clear whether consumers fully comprehend what the term "organic" implies. The primary reason to buy organic food seems to be the belief that it is healthier, with its perceived healthfulness serving as an indicator of quality (Hughner, McDonagh, Prothero, Shultz II, and Stanton 2007). The associations that consumers make with health seems to be based on the lack of use of chemicals, as well as the use of natural, as opposed to man-made, ingredients in the production of such foods. Perceived healthfulness is a better predictor of consumer choice of organic foods compared to concern for the environment (Magnusson, Arvola, Husti, Aberg, and Sjoden 2003). Thus, while consumers are not necessarily clear about what makes organic food

"organic," they buy primarily for health reasons, motivated by the belief that organic foods are natural and their production does not use chemicals and pesticides.

Sustainable: Sustainable products, meanwhile, are those that promote positive social and environmental principles (Luchs et al. 2010). Apart from the natural and environmentally friendly qualities, this concept includes the notion of welfare – treating workers, communities and animals ethically. As such food sustainability is broadly focused on the social and ecological impacts of a product (van Calker et al. 2005), which assumes a broader perspective than either green or organic characteristics alone. Specifically, sustainability attributes may include: naturalness, environmental friendliness, animal welfare, waste, fair trade and local origin considerations (van Dam and van Trijp 2013). Also, as evidenced by attempts to objectively measure product sustainability, there is a general emphasis on product safety, healthfulness, greenness and ethicality (e.g., GoodGuide 2014; Bittman 2012). In this sense, sustainability for food products is a more inclusive concept, in that it encapsulates the aspects that are important in green and organic food products. Sustainable products contain natural ingredients, are produced using methods that do not harm the environment, and are produced by firms that treat their workers, animals, and communities ethically.

Having clarified the differences between sustainability and related constructs, we now focus on developing the dimensions of consumer perceived product sustainability. Because sustainability of products is a credence factor, consumer perceptions are critical in guiding purchase and use decisions.

Consumer Perceived Product Sustainability

The CPPS scale is intended to measure consumer perceived sustainability of food and beverage products. Consumer perceptions of sustainability of these products contain dimensions related to the extent to which a food is natural or real; the implications for the welfare of animals, workers and communities; and the environmental impact of production, use and disposal of products.[2] The items comprising the scale are intended to be comprehensive, yet simple, so that individuals of varying knowledge levels will be able to respond to a product's perceived performance on each dimension. CPPS is intended to help predict consumer behavior with respect to sustainable food products and provide a method of comparison across dimensions of sustainability. The measure designed in the present research is a reflective measure intended to capture consumer perceptions of product sustainability. Since CPPS is subjective and does not address every aspect of product sustainability that would be required to form an objective sustainability score, the items should not be treated as an index of product sustainability.

Individual consumption practices with respect to food and beverages have been driven by normative expectation of health, which overshadow a more holistic view of these products (Block et al. 2011). While health is considered a key reason why consumers may adopt sustainable food products, it is primarily utilitarian in nature (van Dam and van Trijp 2013) and not central to the concept of sustainability. As such, however, the underlying determinants of health judgments for sustainable products are that the product does not contain artificial ingredients and that they are produced without

[2] The research by Hughner et al. (2007) is careful to note that the meaning of food safety was not clear in the underlying studies and likely represents the fact that these food items are not produced with chemicals or by industrial farmers. Meanwhile, food security is focused on producing food in a manner that provides adequate nutrition for all and does not negatively impact the environment (Garnett 2013). As such, this research focuses specifically on the natural, social and environmental components of sustainability and does not address food safety independently.

recourse to harmful chemicals. Thus, what consumers evaluate is the degree to which the food product does not contain harmful ingredients. The comparison that they implicitly make is between the health consequences of a sustainable version of the product and its conventional counterpart. Health assessments that consumers make in the context of sustainable products are not absolute in the sense that there are food products such as ice-cream, not healthy in the traditional sense, that are available in sustainable versions (Tara's Organic Ice Cream 2014). Thus healthfulness, per se, is not a dimension of sustainability.

Based then on a review of the sustainability literature, feedback from participants in the food sustainability survey, and independent efforts to measure product sustainability (e.g., Bittman 2012; GoodGuide 2014; Walmart 2014), three dimensions appear to be present for food sustainability – Real, Welfare, and Environment. Each of these is discussed more thoroughly next.

Real Food. Firms, certification agencies, and independent efforts to measure product sustainability recognize the importance of real or natural food for sustainability. For example, a central element of Mark Bittman's (2012) ideal food label is the extent to which a product comes from ingredients that are naturally occurring or not artificially created. Real foods ideally do not contain ingredients that are harmful to human health (e.g., GoodGuide 2014; Whole Foods Market 2014), and they may be considered the best tasting, best quality products available (e.g., Hughner et al. 2007; Whole Foods Market 2014). Similar to the defining qualities of organic foods (USDA 2014), real foods would not contain GMOs or artificial preservatives. Also, animals would not have been given antibiotics that may transfer to humans when consumed. These factors, which have

positive health implications, serve as the primary motivators for regular consumers of organic food (Hughner et al. 2007). Foods that are processed, condensed, made from artificial ingredients including artificial colors, sweeteners and flavors, for example, may be considered less real by consumers, as the item is no longer unadulterated. In addition, the notion of realness also stems from the green product movement, where the extent to which a product is perceived to be natural versus artificial helps consumers form beliefs of overall environmental impact (Ewing, Allen and Ewing 2012). This association is consistent with the Community Supported Agriculture (CSA) movement, in which consumers are focused on purchasing fresh, seasonal foods that are free of chemicals and produced by farmers that they know with the expectation that these products are healthier (e.g., Cone and Myhre 2000; Thompson and Coskuner-Balli 2007).

As such, the "Real" dimension is intended to measure the extent to which a consumer believes a focal food item and/or its ingredients are natural, i.e. not man-made. Real foods are considered sustainable in that they pose less of a risk to human health and may increase exposure to healthful nutrients.

Welfare. The social impact of products and firms is central to most definitions of sustainability (Montiel and Delgado-Ceballos 2014). As such many firms focus on the "triple bottom line" (i.e., people, planet, profit) and numerous organizations exist to promote the economic development of communities and the humane treatment of both people and animals. Certification agencies are also focusing on welfare as a key driver of product sustainability. For example, both the Smithsonian Migratory Bird Center and Fair Trade USA include requirements for fair and safe working conditions and the presence of fair, stable prices for producers. Additionally, independent efforts to rate product

sustainability include dimensions related to the fair treatment of workers, animals and communities (e.g. Bittman 2012; GoodGuide 2014; Walmart 2014; Whole Foods 2013). Consumers have also shown concern for the welfare component of sustainability by joining CSAs, which promote the economic development of communities and share the risk between farmers and consumers (LocalHarvest 2014).

In response to recent attention in the popular press, consumers such as those that we surveyed, are also more aware of the treatment of animals. One participant we surveyed indicated that welfare indicates that, "animals should not have been subjected to routine torture prior to slaughter (i.e., chopping off chicken beaks and toes, keeping them in packed cages, etc.)." Retailers, such as Whole Foods who uses a 5-step Animal Welfare rating system focusing on the ability of animals to move freely, are also making the treatment of animals more salient to consumers.

Therefore, the "Welfare" dimension is intended to measure consumer perceptions with respect to the extent to which animals, workers, and local communities are treated fairly and benefit from the production of a product. This includes the fair compensation of workers and farmers, the presence of safe working environments, the absence of child labor, and the humane care and treatment of animals. In addition, this dimension captures the economic benefit a product may provide for a community.

Environment. Similar to the Welfare dimension, the environmental impact of products receives significant attention when discussing sustainability. Food, which some may think causes little harm to the environment, is a considerable source of environmental concerns.

> The global food system makes a significant contribution to climate changing greenhouse gas emissions with all stages in the supply chain, from agricultural production through processing, distribution, retailing, home food preparation and waste, playing a part. It also gives rise to other major environmental impacts, including biodiversity loss and water extraction and pollution. (Garnett 2013)

In addition to accounting for up to 28% of all greenhouse gas emissions for developed countries, the food system also results in visible environmental consequences, including deforestation, water scarcity and pollution, destruction of biodiversity, etc. Independent efforts to create an objective measure of sustainability have placed significant emphasis on environmental impacts and have in many cases struggled to quantify these consequences throughout the supply chain (e.g., WalMart Sustainability Index). In addition, nearly all independent certification agencies that certify sustainability-related attributes include a focus on not harming the natural environment. While some organizations such as the Rainforest Alliance and Marine Stewardship Council are predominately focused on preserving biodiversity, others such as FairTrade USA place more emphasis on protecting and encouraging the efficient use of natural resources (FairTrade USA 2014).

The "Environment" dimension is intended to measure consumer perceptions of the environmental impact of a focal product from production to disposal. The sustainable production of food is characterized by the efficient use of land, water and energy. A sustainable product poses less negative impact to plant or animal life. In addition, a focus

on reduced emissions and reduced use of fossil fuels places an emphasis on locally produced foods with shorter transportation distances.

Behavioral Outcomes of Consumer Perceived Product Sustainability

Even though consumers express a desire to purchase sustainable goods, actual purchase behavior does not reflect these intentions. A number of factors have been shown to limit the purchase of sustainable products. Some of these include price premiums, lack of assortment and availability, uncertainty surrounding sustainability certification and claims, inadequate marketing, undesirable appearance of packaging or the product itself, and satisfaction with current shopping decisions (c.f. Hughner et al. 2007). However, consumer values and beliefs as well as perceived ability to make a difference in terms of environmental or social impact (Vermeir and Verbeke 2006) have been shown to influence sustainable consumption. Since consumers have a desire to make a positive impact, several studies have suggested that consumer perceptions of product environmental and social performance are influential in determining behavior (Ewing, Allen and Ewing 2012; Gershoff and Frels 2013; van Doorn and Verhoef 2011). Considering the absence of an objective measure of product sustainability combined with often confusing messaging, perceptions of the actual environmental and social performance of a product may vary greatly. Whether individuals are attracted to sustainable products for the utilitarian aspects (i.e., health, taste, etc.) or the benefits afforded to others, perceived product sustainability can be viewed as an attribute that holds value for a consumer (van Doorn and Verhoef 2011). The value associated with this attribute may lead to a willingness to pay a price premium for sustainable products (Auger et al. 2008; Trudel and Cotte 2008). Also, along the environmental dimension, it

has been shown that perceived greenness has a positive impact on attitudes toward a product (Ewing, Allen and Ewing 2012), which in turn may have implications for consumption behavior (Fishbein and Ajzen 1975). Since, sustainable products offer additional benefits over those promised by conventional goods, the extent to which consumers perceive a product to be sustainable is anticipated to affect behavior. Specifically, CPPS is anticipated to have a significant, positive relationship with willingness to pay and purchase intentions for sustainable food and beverages due to the perceived benefits associated with product sustainability.

H1a: CPPS has a positive relationship with willingness to pay.

H1b: CPPS has a positive relationship with purchase intentions.

Moderators of the CPPS-Behavioral Intentions Relationship

In addition to the influence of CPPS on the willingness to pay and purchase likelihood of sustainable products, both consumer and product characteristics are considered as moderators to these relationships. From a consumer standpoint, individual construal level is suggested to moderate the relationship between CPPS and both willingness to pay and purchase likelihood. Construal theory (Liberman and Trope 1998; Vallacher and Wegner 1985, 1987) indicates that the level of mental abstraction for a particular activity impacts behavior. A person can mentally represent an activity at either low or high levels. At low levels, a person is focused on how an action is performed or the specific steps required to complete the action. At high levels of abstraction, focus is on why the activity is being performed or the overall meaning assigned to the action. Those who identify activities at higher levels are more stable in their behavior as it is rooted in a larger belief system, not just a series of steps (Vallacher and Wegner 1989).

Individuals tend to strive for the highest level of abstraction that they can easily maintain (Vallacher and Wegner 1987).

The level at which an action is identified is determined by action knowledge, action context, and action difficulty, and as such is considered to be domain specific (Vallacher and Wegner 1987). In the context of shopping for sustainable food and beverage products, a person is likely to have varying identification levels based on their awareness and knowledge of issues related to sustainability. In addition, the often limited availability, lack of assortment and higher prices of sustainable products (c.f. Hughner et al. 2007) impose a certain level of difficulty on the purchase of these goods. While construal levels can be driven by a particular situation, individuals who exhibit a general tendency to represent activities at a higher level will carry that propensity into most domains (Vallacher and Wegner 1989). Additionally, Freitas, Gollwitzer and Trope (2004) demonstrate that when an abstract mind-set is activated, it will carry over into unrelated tasks, suggesting that marketers can impact construal levels.

This has implications for the purchase of sustainable products, as those individuals who identify the purchase of sustainable products at a high level are likely to place more emphasis on their perceptions of product sustainability during the purchase decision. The high identifier, we propose, will only be willing to pay more for a sustainable product and purchase it when he perceives it to perform well on the sustainability dimensions. The high identifier is focused on purchasing a product within a larger value system that is consistent with his goals (Trope and Liberman 2003. In this situation, the sustainability-related attributes, which may be viewed as secondary, become a method to attain those goals and product desirability is emphasized (van Doorn

and Verhoef 2011). For a low identifier in a more concrete mindset, we propose that perception of product sustainability will have very little impact on willingness to pay and purchase since the focus is on the steps to accomplish the activity, resulting in a focus on primary product attributes and feasibility (van Doorn and Verhoef 2011).

H2a: Construal level moderates the relationship between CPPS and willingness to pay such that those in an abstract mindset will be more willing to pay when CPPS is greater. This effect is not anticipated for those in a concrete mindset.

H2b: Construal level moderates the relationship between CPPS and purchase likelihood such that those in an abstract mindset will be more likely to purchase a sustainable product when CPPS is greater. This effect is not anticipated for those in a concrete mindset.

In addition to construal level, the type of product (utilitarian versus hedonic) is expected to moderate the impact of CPPS on both willingness to pay and purchase likelihood for sustainable goods. Utilitarian goods are those associated with needs and use for functional purposes. Hedonic goods are those associated with wants and use for affective reasons. It has been suggested that the role of product type should be explored in order to understand purchase intentions for sustainable goods (Peloza, White and Shang 2013). It is not clear, however, how product type will impact willingness to pay and purchase intentions for these items.

The present research proposes that product type differentially impacts willingness to pay and purchase likelihood such that consumers are more willing to pay price premiums for sustainable hedonic products but exhibit higher purchase intentions for

sustainable utilitarian products. The purchase of hedonic items may be associated with guilt or a loss of self-control. In order to control the consumption of hedonic products, consumers may choose goods priced at a premium (Wertenbroch 1998). Consumers are also more likely to pay more for hedonic than utilitarian products when a large donation is being made to charity, as the benefit to others outweighs the guilt experienced from the purchase of the hedonic product (Strahilevitz and Myers 1998; Strahilevitz 1999). Due to the guilt that may be associated with the purchase of hedonic products, consumers are more likely to accept price premiums for hedonic goods that have positive environmental and social attributes as compared to conventional products. Also, prior research in the organic food domain suggests that prosocial benefits result in a greater willingness to pay for hedonic but not utilitarian products (van Doorn and Verhoef 2011). Since utilitarian products are considered needs rather than wants, the incremental benefit of behaving in healthy, environmentally, or socially responsible manner may be lower, resulting in less willingness to pay a price premium when products are perceived as more sustainable.

H3a: CPPS has a significantly stronger positive relationship with willingness to pay for hedonic products than for utilitarian products.

Purchase likelihood for sustainable utilitarian products, however, is expected to be greater than that for sustainable hedonic products. People purchase utilitarian products primarily for functional purposes and hedonic goods for pleasure. Sustainability is inherently a practical concern. As a result, consumers may perceive a mismatch between the desired benefit of a hedonic product and the value promised by a healthy, environmentally-friendly, socially responsible item (Dhar and Wertenbroch 2000). Given the incongruence between the benefits promised by hedonic goods, pleasure and self-

indulgence, and those provided by sustainability, survival and preservation for future generations, it is expected that product evaluations and, therefore, purchase intentions will be lower for sustainable hedonic compared to sustainable utilitarian products (Luchs et al 2010; Torelli, Monga and Kaikati 2012). Additionally, organic product claims have been shown to have negative implications for perceived product quality for hedonic but not utilitarian products (van Doorn and Verhoef 2011). Perceived quality for hedonic products with positive environmental and social attributes may result from a feeling of decreased pleasure associated with the consumption of the item (Raghunathan, Naylor and Hoyer 2006). Product type, therefore, is hypothesized to moderate the relationship between CPPS and purchase likelihood such that there is a negative impact of CPPS on purchase likelihood for hedonic products and a positive effect of CPPS on purchase likelihood for utilitarian products.

H3b: CPPS has a negative relationship with purchase intentions for hedonic products and a positive relationship for utilitarian products.

Methodology

Scale Development

Scales to measure the CPPS dimensions - Real, Welfare and Environment - were developed following standard scale development procedures (Churchill 1979). A preliminary list of items was generated following a review of the literature related to sustainability and the definitions and criteria used by various certification agencies, non-governmental organizations and retailers to assess food sustainability. This initial list of items was reviewed by three academics for face validity and completeness. Based on their comments, the items were reworded to suit a lower comprehension level and a few

additional items were added. Using the procedure implemented by Netemeyer, Burton and Lichtenstein (1995), the 32 items were evaluated for representativeness by two separate groups of marketing professors and Ph.D. students. Based on the feedback from this process, all items were retained for further testing.

Thirty-two items were tested using an adult sample in the U.S. via Amazon's Mechanical Turk (MTurk). Participants (n = 364; 56% female) were exposed to images of three products (milk, granola bars, ground coffee) and asked to rate them on the 32 items. Dairy products are one of the most commonly purchased organic food items (Vermeir and Verbeke 2006), and milk is one of the top 10 grocery items purchased in the United States (Dove 2011), indicating that this product is relevant for most consumers. Granola bars and coffee were also chosen due to their consumer relevance and their use in previous research (Peloza, White and Shang 2013). To assess whether the scale discriminates between sustainable and non-sustainable products, participants were randomly assigned to view either the conventional or sustainable version of each product. Consistent with previous research (e.g. Ewing, Allen and Ewing 2012; Vermeir and Verbeke 2006), product sustainability was signaled using the USDA Organic logo and other descriptive indicators on the packaging for each product [Appendix C]. A pretest of 256 students in the behavioral lab at a major university confirmed that participants identify a product containing the USDA organic seal and the word "Organic" as more sustainable than the same container without those indicators.[3]

[3] A gallon of milk was the product used in the pretest. Participants were randomly assigned to one of two conditions (sustainable labeling, no sustainable labeling). A 3-item ad hoc universal measure of sustainability measured on a 7-point scale (1 = "Strongly Disagree," 7 = "Strongly Agree") was used to measure perceived product sustainability. The items included "This milk is an environmentally friendly product;" "This milk is a green product;" and "This milk is a socially responsible product." The reliability for these items was acceptable with alpha = .94. A one-way ANOVA of product condition on the universal sustainability measure reveals a

Exploratory factor analysis was conducted on the 32 indicators for Real, Welfare and Environment on all products simultaneously (N = 1,092). A varimax rotation was used, and the indicators were fit into three factors. Items were deleted if they showed low factor loadings (below .5) (Lynch et al. 2010). The resulting scale contained 23 items. Since shorter scales are more desirable to encourage participation and limit participant fatigue (Netemeyer, Bearden and Sharma 2003), nine additional items were eliminated based on low item-to-total correlations and conceptual redundancy within each dimension. The remaining 14 items load strongly on the respective factors as expected [Table 2.1]. Of note, however, participants evaluated the item related to animal welfare (This product does not have a negative impact on animal populations) as more similar to the items in the Environment dimension than those in the Welfare dimension. Since the item related to animal welfare is conceptually more similar to the items in the Environment dimension than to the impact of a product on farmers, workers and the community, in all further analysis the treatment of animals is considered part of the Environment dimension.

A confirmatory factor analysis (CFA) using LISREL 8.80 was then conducted for the entire sample and for each of the three products independently in order to assess scale consistency across products. The 14 items were fit into a second-order model with each factor loading on CPPS. The resulting items all load strongly and significantly on their respective factors [Table 2.2], providing evidence of convergent validity. Since the three factors were conceptualized to capture the domain of perceived product sustainability, all

significant effect of product labeling ($F(1, 254) = 115.02$, $p \leq .00$). The means by product type are as follows: M(sustainable labeling) = 4.85, M(no sustainable labeling) = 3.24.

subsequent analysis is focused on the second-order model with each of the three latent factors loading on CPPS [Table 2.3].

Model Fit, Internal Consistency and Discriminant Validity

The second-order CPPS model displays good fit statistics with a comparative fit index (CFI) of .98, non-normed fit index (NNFI) of .98, and root mean squared error of approximation (RMSEA) of .08 [Table 2.4]. Table 4 also details the fit statistics for the scale across the three different products. Across all products, the model exhibits acceptable fit with a comparative fit index (CFI) of .95 or greater, non-normed fit index (NNFI) of .94 or greater, and root mean squared error of approximation (RMSEA) of .11 or less for each of the three products. CFI and NNFI with values above .95 are considered "good," and RMSEA less than .10 is considered adequate (Hair et al. 2009). The CFA indicates that the CPPS scale exhibits adequate model fit across all products tested.

Each of the three factors also exhibits good internal consistency across all products tested. The coefficient alpha for each of the factors ranges between .86 and .90 for the combined sample and .82 or greater for each of the products [Table 2.5]. The reliability for the combined sample adjusted for dimensionality is .87 (Nunnally 1978). Measures that exhibit alpha coefficients in the .90 range are considered highly internally consistent (Netemeyer, Bearden and Sharma 2003; Nunnally and Bernstein 1994). Additionally, the average variance extracted (AVE) for each factor exceeds .50 [Table 6], which is considered a strong indicator of internal consistency (Fornell and Larcker 1981). Across all products tested, the measures exhibit strong internal consistency and convergent validity.

Using the procedures recommended by Bagozzi (1980) and Fornell and Larcker (1981), discriminant validity is established between the three latent factors of CPPS. Using Bagozzi's (1980) procedure, the change in chi-sq is greater than 3.84 between the baseline model and each of the models in which the correlation of two of the constructs is constrained to 1.0, providing evidence of discriminant validity between the constructs [Table 2.6]. In a more stringent test of discriminant validity (Fornell and Larcker 1981), the AVE for each factor exceeds the squared correlation between any two factors [Table 2.6], indicating that each of the latent factors (Real, Welfare, and Environment) is distinct from each of the others. The results of these analyses indicate that the CPPS scale is multi-dimensional and exhibits good fit.

Convergent, Nomological and Predictive Validity

In order to establish convergent and nomological validity, the correlations between CPPS and conceptually similar constructs, as well as its antecedents and outcomes are examined (Lynch et al. 2010). First, CPPS is compared to a 3-item ad-hoc measure of product sustainability ("This product is environmentally friendly/green/socially responsible."). This measure is similar to the 3-item bipolar scale to measure greenness implemented by Ewing, Allen and Ewing (2012) with a more sustainability-oriented focus including social attributes. The ad-hoc measure summarizes the definition of sustainability adopted in the present research where a product contains positive environmental and social attributes (Luchs et al. 2010). The correlation between CPPS and the ad-hoc scale is significant and positive as anticipated ($r = .80$, $p \leq .01$), suggesting that the CPPS scale is indeed measuring the extent to which consumers perceive a product to have ethical and environmental attributes. Even though the

correlation between CPPS and the ad-hoc scale is high, CPPS taps into the latent construct of product sustainability more fully identifying the underlying components of each dimension and also allowing for analysis at the level of each dimension individually using a multi-item measure.

In terms of nomological validity, CPPS is predicted to be higher for products that are marketed as being sustainable versus those that are not (i.e. conventional products). The correlations between product sustainability as manipulated in this study and CPPS are positive and significant ($r = .21$, $p \leq .01$). The positive relationship between product sustainability and CPPS indicates that consumers perceive a product to be more sustainable, using the CPPS scale as the measure of perceived product sustainability, when the product packaging contains indexical cues than when no sustainability indicators are present ($M_{conventional\ product} = 4.46$, $M_{sustainable\ product} = 4.86$; $t(1090) = 6.96$, $p \leq .00$). This pattern of results is consistent with the findings of Ewing, Allen and Ewing (2012), who also indicate that perceptions of product greenness positively impact attitude towards a product. The present research also finds a significant positive correlation between CPPS and attitude towards the product ($r = .40$, $p \leq .01$). Attitude towards the product was measured using a 4-item 7-point bipolar scale (Bad/Good, Negative/Positive, Unfavorable/Favorable, Not at all likely to try/Very likely to try). In addition to attitudes, CPPS has a positive correlation with both willingness to pay, H1a, ($r = .31$, $p \leq .01$) and purchase likelihood, H1b, ($r = .35$, $p \leq .01$). These results indicate that the CPPS scale is acting as anticipated and displays nomological validity. Additionally, the partial correlations between CPPS and both purchase likelihood ($r = .16$, $p \leq .00$) and willingness to pay ($r = .08$, $p \leq .01$), controlling for the 3-item ad-hoc measure of product

sustainability, provide evidence of incremental predictive validity of the CPPS measure compared to a general measure.

Studies

Study 1

Study 1 is designed to test the impact of CPPS on willingness to pay (H1a) and purchase likelihood (H1b), as well as the interaction between CPPS and construal level on willingness to pay (H2a) and purchase likelihood (H2b).

Participants. One hundred ninety-nine adults (50% female) in the United States took part in the study using MTurk. The study employed a 2 (product sustainability: conventional v. sustainable) x 2 (construal: concrete v. abstract) between subjects design. After removing participants who failed the quality check and those who indicated a willingness to pay of zero dollars, one hundred and ninety observations remained for further analysis.

Procedure. Survey participants were randomly assigned to one of the four conditions. Construal level was manipulated using the Navon task (Navon 1977). This manipulation of local versus global processing has been shown to significantly influence individual construal levels (Liberman and Förster 2009; Trope and Liberman 2010; Wakslak and Trope 2009). In this task, participants are shown a standard figure and are instructed to focus on either the shapes that make up the figure (local/concrete) or the overall shape of the figure (global/abstract). Next, they are shown two comparison figures and are instructed to select the figure that best represents either the shapes that make up the standard figure or the overall shape of the figure, depending on condition.

After completing the construal level manipulation, participants were exposed to an advertisement for a bottle of orange juice, a food and beverage product purchased frequently in the United States. The advertisement was used as the primary manipulation for product sustainability [Appendix D]. Additionally, the USDA Organic logo was shown on the packaging for the sustainable orange juice. This approach is consistent with previous research where product labeling is manipulated to signal product greenness and sustainability (e.g., Ewing, Allen and Ewing 2012; Vermeir and Verbeke 2006).

After viewing the advertisement, participants then responded to the CPPS scale ($\alpha = .88$) and the primary dependent variables, purchase likelihood ($\alpha = .96$) and willingness to pay ($M = \$3.39$). Purchase likelihood was measured using the 3-item measure employed by White and Peloza (2009). Willingness to pay was measured using a sliding scale ranging from \$0 to \$10. To provide a reference point, participants in all of the conditions were instructed that the "cheapest container of orange juice this size sells for at least \$3.00" at their grocery store. They were then asked to indicate the amount they would be willing to pay for the orange juice in the advertisement using the sliding scale. Finally, participants indicated their liking of each product, responded to a number of values, beliefs and trait questions, and completed demographic information.

Results. A one-way between subjects ANOVA of product sustainability (conventional v. sustainable) on CPPS indicates that there is a significant difference in perceived sustainability between the two product conditions. These results provide evidence that the product sustainability manipulation was successful. Further, a regression of CPPS on willingness to pay shows that there is a significant, positive effect of perceived product sustainability on willingness to pay ($\beta = .19$, $t(188) = 2.49$, $p < .05$),

providing support for H1a. H1b is also supported with a regression of CPPS on purchase likelihood ($\beta = .70$; $t(188) = 6.84$, $p \leq .00$). These results suggest that the extent to which consumers believe a product to be sustainable impacts behavioral intentions.

H2a and H2b, however, posit that this result does not hold equally strongly for all consumers. Rather, individuals in an abstract mindset may demonstrate greater willingness to pay and purchase intentions for sustainable products when CPPS is high, but this effect is not anticipated for those in a concrete mindset. H2a and H2b are tested with a regression using PROCESS Model 1 (Hayes 2012) with CPPS, construal level and their interaction in the model. There is a significant, positive effect of CPPS on both willingness to pay and purchase likelihood for participants in an abstract mindset but not those in a concrete mindset [Table 2.8]. These findings are consistent with the hypothesized relationships and provide evidence that the extent to which a product is seen as sustainable impacts behavioral intentions for individuals in an abstract mindset. However, for individuals who are thinking more concretely focus is likely on primary product attributes and feasibility (van Doorn and Verhoef 2011) rather than secondary attributes such as product sustainability.

Discussion. Study 1 provides additional evidence of nomological validity for the CPPS scale. Consumers rate products with cues that emphasize sustainability attributes of a product more highly on the CPPS scale than those that do not carry similar indicators. Additionally, support is provided for H1a and H1b, indicating that perceived sustainability has a significant positive impact on both willingness to pay and purchase likelihood. The relationship between CPPS and the behavioral intention variables is also moderated by consumer mindset such that those in an abstract construal condition exhibit

greater willingness to pay (H2a) and purchase intentions (H2b) for a product as CPPS increases. There is no significant difference in behavioral intentions for those in a concrete mindset as perceptions of product sustainability increase. This pattern of results is consistent with the hypothesized relationships and highlights that those in an abstract mindset are likely to differentiate between sustainable products based on perceived level of sustainability, while those in a more concrete mindset are not likely to alter their behavior based on level perceived sustainability.

Study 2

Study 2 is designed to test the impact of product type on the relationship between CPPS and willingness to pay (H3a) and purchase likelihood (H3b).

Participants. Two hundred and one adults (41% female) in the United States took part in the study using MTurk. The study employed a 2 (product sustainability: conventional v. sustainable) x 2 (product type: utilitarian v. hedonic) between subjects design. After removing participants who failed the quality check and those who indicated a willingness to pay of zero dollars, one hundred eighty-eight observations remained for further analysis.

Procedure. Survey participants were randomly assigned to one of the four conditions. Participants were exposed to an advertisement for a bottle of orange juice similar to the advertisement used in Study 1. The advertisement served as the primary manipulation for product sustainability and product type [Appendix E]. In the utilitarian condition, the advertisement emphasized healthfulness (be healthy). In the hedonic condition, the advertisement focused on orange juice being a treat (treat yourself). After viewing the advertisement, participants then responded to the CPPS scale ($\alpha = .86$) and

the primary dependent variables, purchase likelihood (α = .94) and willingness to pay (M = $3.36) as in Study 1. Participants then responded to a 10-item (5 utilitarian and 5 hedonic) measure on a 7-point bipolar scale (Voss, Spangenberg and Grohmann 2003) as a manipulation check for product type. Finally, participants indicated their liking of each product, responded to a number of values, beliefs and trait questions, and completed demographic information.

Manipulation Checks. A one-way between subjects ANOVA of product sustainability (conventional v. sustainable) on CPPS indicates that there is a significant difference in perceived sustainability between the product conditions ($F_{(1, 187)} = 9.61$; $p \leq .00$), with the orange juice in the sustainable condition receiving a higher score on the CPPS scale. In order to check the product type manipulation, paired-sample *t*-tests were conducted within each product type condition on the sum score of the utilitarian (α = .89) and hedonic (α = .85) attributes (Voss, Spangenberg and Grohmann 2003). Participants in the utilitarian condition judged the orange juice to be equivalent on the utilitarian and hedonic attributes ($M_{utilitarian} = 5.43$, $M_{hedonic} = 5.43$; $t(94) = .00$, *n.s.*). However, those in the hedonic condition rated the hedonic attributes more highly than the utilitarian ones ($M_{utilitarian} = 5.28$, $M_{hedonic} = 5.44$; $t(92) = 1.95$, $p < .10$). Tests for crossover effects (Perdue and Summers 1986) between both manipulated variables, product sustainability and product type, reveal no significant interactions on the manipulation check measures.

Results. In order to test the hypotheses that product type moderates the relationship between CPPS and both willingness to pay (H3a) and purchase likelihood (H3b), regressions were run using PROCESS Model 1. While CPPS has a significant positive relationship with willingness to pay (β = .36; $t(184) = 3.41$, $p \leq .00$), the

interaction between CPPS and product type is not significant. For both the utilitarian and hedonic product conditions, an increase in CPPS results in an increase in willingness to pay. However, there is no significant difference between the magnitude of the coefficients of CPPS on willingness to pay for utilitarian (effect = .36; $t(184) = 3.41$, $p \leq .00$; 95% C.I. [.15, .57]) and hedonic (effect = .34; $t(184) = 3.11$, $p \leq .00$; 95% C.I. [.12, .56]) products. H3a is not supported.

A similar pattern of results is observed for purchase likelihood. CPPS has a significant, positive relationship with purchase likelihood ($\beta = .50$; $t(184) = 12.07$, $p \leq .00$). The interaction between CPPS and product type, however, is not significant. For both the utilitarian and hedonic product conditions, an increase in CPPS results in an increase in purchase likelihood. However, the difference between the magnitude of the coefficients of CPPS on purchase likelihood for utilitarian (effect = .50; $t(184) = 12.07$, $p \leq .00$; 95% C.I. [.42, .58]) and hedonic (effect = .42; $t(184) = 9.93$, $p \leq .00$; 95% C.I. [.34, .50]) products is not significant. Even though H3b is not directly supported, the results are in the anticipated direction with CPPS having a stronger effect on purchase likelihood for utilitarian products than hedonic.

Discussion. The interaction between CPPS and product type are not significant for either willingness to pay or purchase likelihood in Study 2. A potential explanation for these findings, which are inconsistent with van Doorn and Verhoef (2011), may lie in the manipulation of product type. In order to maintain experimental control and limit confounding factors related differences between products, orange juice, which may be framed as either having utilitarian or hedonic attributes (van Doorn and Verhoef 2011), was used instead of two separate products that are predominately consumed for

functional versus affective reasons. Unlike van Doorn and Verhoef (2011), who primed a vice or virtue mindset prior to participants viewing the orange juice, Study 2 emphasized either utilitarian or hedonic attributes of the product in an advertisement.

Study 3

Study 3 is designed to test the impact of product type on the relationship between CPPS and willingness to pay (H3a) and purchase likelihood (H3b). This study differs from Study 2 in the manipulation of product type (utilitarian v. hedonic). Otherwise, all else is equivalent.

Participants. Two hundred and two adults (43% female) in the United States took part in the study using MTurk. The study employed a 2 (product sustainability: conventional v. sustainable) x 2 (product type: utilitarian v. hedonic) between subjects design. After removing participants who failed the quality check and those who indicated a willingness to pay of zero dollars, one hundred eighty-five observations remained for further analysis.

Procedure. Survey participants were randomly assigned to one of the four conditions. First, participants completed a mindset manipulation using a sentence-unscrambling task to prime a utilitarian or hedonic mindset (van Doorn and Verhoef 2011). Each participant unscrambled 10 sentences, seven of which highlighted either a utilitarian or hedonic mindset (e.g., "Things I buy have to be useful" in the utilitarian condition; "Pleasure is important in life" in the hedonic condition). Participants were then exposed to an advertisement for a bottle of orange juice similar to the advertisement used in Study 1. The advertisement served as the primary manipulation for product sustainability. After viewing the advertisement, participants then responded to the CPPS

scale (α = .87) and the primary dependent variables, purchase likelihood (α = .96) and willingness to pay (M = $3.36) as in Study 1. Participants then responded to a 10-item (5 utilitarian and 5 hedonic) measure on a 7-point bipolar scale (Voss, Spangenberg and Grohmann 2003) as a manipulation check for product type. Finally, participants indicated their liking of each product, responded to a number of values, beliefs and trait questions, and completed demographic information.

Manipulation Checks. A one-way between subjects ANOVA of product sustainability (conventional v. sustainable) on CPPS indicates that there is a significant difference in perceived sustainability between the product conditions ($F_{(1, 183)} = 3.37$; $p < .05$), with the orange juice in the sustainable condition receiving a higher score on the CPPS scale. In order to check the product type manipulation, paired-sample *t*-tests were conducted within each product type condition on the sum score of the utilitarian (α = .89) and hedonic (α = .88) attributes (Voss, Spangenberg and Grohmann 2003). Participants in the utilitarian condition judged the orange juice to be higher on the utilitarian attributes compared to the hedonic attributes ($M_{utilitarian} = 5.02$, $M_{hedonic} = 4.59$; $t(96) = 4.52$, $p \leq .00$). However, those in the hedonic condition also rated the utilitarian attributes more highly than the hedonic ones ($M_{utilitarian} = 5.14$, $M_{hedonic} = 4.69$; $t(87) = 4.45$, $p \leq .00$). There is no significant difference between perceived hedonic attributes between the utilitarian and hedonic condition. Similar to Study 2, these findings indicate that the product type manipulation was not successful.

Results. In order to test the hypotheses that product type moderates the relationship between CPPS and both willingness to pay (H3a) and purchase likelihood (H3b), regressions were run using PROCESS Model 1. While CPPS has a significant

positive relationship with willingness to pay (β = .31; $t(181) = 3.54$, $p \leq .00$), the interaction between CPPS and product type is not significant. For both the utilitarian and hedonic product conditions, an increase in CPPS results in an increase in willingness to pay. Additionally, there is no significant difference between the magnitude of the coefficients of CPPS on willingness to pay for utilitarian (effect = .30; $t(181) = 3.54$, $p \leq .00$; 95% C.I. [.14, .48]) and hedonic (effect = .19; $t(181) = 2.03$, $p < .05$; 95% C.I. [.01, .38]) products. H3a is not supported.

A similar pattern of results is observed for purchase likelihood. CPPS has a significant, positive relationship with purchase likelihood (β = .69; $t(181) = 4.54$, $p \leq .00$). The interaction between CPPS and product type, however, is not significant. For both the utilitarian and hedonic product conditions, an increase in CPPS results in an increase in purchase likelihood. Additionally, the difference between the magnitude of the coefficients of CPPS on purchase likelihood for utilitarian (effect = .69; $t(181) = 4.54$, $p \leq .00$; 95% C.I. [.39, .99]) and hedonic (effect = .82; $t(181) = 5.00$, $p \leq .00$; 95% C.I. [.50, 1.15]) products is not significant. H3b is not supported.

Discussion. The interaction between CPPS and product type are not significant for either willingness to pay or purchase likelihood in Study 3. Similar to Study 2, the mindset manipulation did not elicit a significant difference in perceived utilitarian versus hedonic attributes for the orange juice between conditions. Based on the results of Study 2 and Study 3, it seems prudent to test the hypothesized relationships in H3a and H3b using a prototypical utilitarian product compared to a prototypical hedonic product. Even though this could introduce confounds based on product differences, we are unable to get a clean test of the hypothesized relationships using a single product and manipulating

either the utilitarian or hedonic attributes of the product or manipulating individual mindset. Based on previous research (van Doorn and Verhoef 2011), further investigation of the relationship between CPPS and product type is merited.

General Discussion

The extant literature on sustainable consumption has differentiated between conventional and sustainable products through product descriptions, labeling, and packaging and largely has assumed that all sustainable products are equal. Several studies have suggested that consumers may perceive differences in the environmental and social impact of sustainable goods that influence behavior (Ewing, Allen and Ewing 2012; van Doorn and Verhoef 2011). The present research introduces a scale to measure consumer perceived product sustainability in the food and beverage domain. The results of the studies presented herein show support for the notion that CPPS has a positive effect on behavioral intentions (H1a, H1b).

In addition to the development of the CPPS scale, individual construal level and product type (utilitarian v. hedonic) are shown to impact the relationship between CPPS and both willingness to pay and purchase likelihood. Study 1 demonstrates that consumers in an abstract mindset exhibit greater willingness to pay (H2a) and purchase intentions (H2b) as CPPS increases. Meanwhile, CPPS does not have a significant effect on behavioral indicators for those in a concrete mindset. These findings suggest that consumers who think about why they purchase a product place more emphasis on overall product sustainability than those who construe the activity at a lower level. This supports the findings of van Dam and van Trijp (2013) who show that construal level as measured by Future Temporal Orientation impacts the determinance of sustainability-related

attributes, which is a reliable predictor of behavior. Individuals in an abstract mindset, therefore, are more likely to focus on the desirability of sustainability benefits and may view sustainability attributes, which may be considered secondary product features, as a way to meet those goals.

In addition to individual construal levels, product type is introduced as a moderator to the relationship between CPPS and behavioral intentions. As suggested by Peloza, White and Shang (2013), consumers respond differently to a sustainable product that is primarily utilitarian versus one consumed for pleasure. Study 2 provides directional support for H3b and shows that CPPS has a stronger impact on purchase likelihood for a utilitarian product than a hedonic product. This is consistent with the expectation that the practical attributes of sustainability may dampen the anticipated pleasure of consuming a hedonic product and have a negative impact on purchase intentions. The present research, however, does not find support for a moderating effect of product type on the relationship between CPPS and willingness to pay (H3a). Analysis of a model similar to the one proposed by van Doorn and Verhoef (2011) does provide evidence that product type impacts willingness to pay for sustainable goods, as there is a significant, positive direct relationship between product sustainability and willingness to pay for hedonic products.

Limitations and Directions for Future Research

The present research should be extended to further explore the relationship between product type and behavioral intentions. While participants in the hedonic product condition in Study 2 rated the hedonic benefits of the orange juice as significantly greater than the utilitarian benefits, the difference in perceived utility and

hedonism between the utilitarian and hedonic product conditions was not significant. This could suggest that the lack of findings in Study 2 is due to an inadequate product type manipulation. Future research should test the hypothesized relationships through either a mindset manipulation (van Doorn and Verhoef 2011) or by using a set of products, which are primarily considered necessities or treats (Wertenbroch 1998).

Theoretical Implications

Through the development of the CPPS scale, the present research contributes to the sustainable consumption literature and offers researchers a tool to better understand consumer reactions to sustainable food and beverages. The CPPS scale can be implemented in several ways to enrich future research. For example, this measure can be used both as a manipulation check for product sustainability and as a dependent variable measuring the impact of changes in labeling, packaging and communications on perceived sustainability. Additionally, the three dimensions of the scale can be used independently to assess the impact of the specific components of sustainability on behavior, as has been done in the literature exploring the impact of sustainability initiatives on firm performance (Jayachandran, Kalaignanam and Eilert 2013).

Managerial Implications

From a managerial standpoint, the CPPS scale allows for an improved assessment of consumer perceptions across products. Not only will this measure allow managers to compare their products to others, but it will also provide an indication of where consumers perceive differences. For example, the CPPS measure will enable managers to pinpoint which dimension of sustainability (Real, Welfare, Environment) is responsible for variance between products. Not only that, and perhaps more importantly, the scale

offers an advantage over more simplistic approaches as it helps identify the specific area within a dimension responsible for variance (e.g., the perceived impact to animal populations versus the release of hazardous materials). Also, with the introduction of the CPPS scale managers as well as researchers have the ability to investigate the proximity of consumer perceptions to more objective measures of sustainability and to determine the factors that account for variance between subjective and objective ratings of product sustainability.

Conclusion

The research presented herein confirms that the extent to which a consumer perceives a product to have positive environmental or social attributes impacts behavioral intentions and provides further evidence that not all sustainable products are evaluated equally. There is considerable variance in the attributes that consumers think constitutes a sustainable product. Through the use of the CPPS scale, which includes considerations of product realness, social responsibility and environmental impact, consumer perceptions of product sustainability can be measured. This measure has implications for sustainable consumption that span both individual and product characteristics.

Chapter 2 Tables

Table 2.1: EFA Varimax Rotated Three-Factor Loadings and Item-to-Total Correlations

Rotated Component Matrix				
	Component			Item-Total
Indicators	Environment	Real	Welfare	Correlation
This product does not contain artificial ingredients	0.23	0.83	0.15	0.77
This product is natural	0.22	0.79	0.27	0.76
This product is not processed (or minimally processed)	0.23	0.82	0.19	0.76
This product does not contain additives	0.24	0.86	0.16	0.82
This product helps the economy where it is produced	0.18	0.16	0.82	0.70
This product does not hurt the economy where it is produced	0.24	0.18	0.80	0.72
Farmers are paid fairly for this product	0.28	0.23	0.72	0.67
The production of this product does not hurt workers	0.41	0.19	0.71	0.73
The production and use of this product results in pollution (R)	0.60	0.17	0.09	0.48
This product does not harm plant life	0.72	0.24	0.31	0.73
There are no hazardous materials made in the production, use or disposal of this product	0.81	0.21	0.21	0.75
The production of this product does not damage waterways or pollute drinking water	0.82	0.20	0.26	0.80
The product does not have a negative impact on animal populations	0.66	0.23	0.41	0.71
This product is produced in an anergy efficient manner	0.61	0.30	0.37	0.67

Table 2.2: CFA Second-Order Model Standardized Loadings

	Standardized Loadings			
Indicators	All Products	Milk	Granola	Coffee
This product does not contain artificial ingredients	0.83	0.82	0.82	0.85
This product is natural	0.81	0.87	0.79	0.81
This product is not processed (or minimally processed)	0.82	0.83	0.82	0.77
This product does not contain additives	0.88	0.84	0.86	0.90
This product helps the economy where it is produced	0.75	0.93	0.94	0.85
This product does not hurt the economy where it is produced	0.78	0.88	0.86	0.75
Farmers are paid fairly for this product	0.75	0.58	0.53	0.53
The production of this product does not hurt workers	0.83	0.65	0.56	0.46
The production and use of this product results in pollution (R)	0.51	0.61	0.69	0.84
This product does not harm plant life	0.79	0.69	0.65	0.72
There are no hazardous materials made in the production, use or disposal of this product	0.81	0.75	0.63	0.83
The production of this product does not damage waterways or pollute drinking water	0.85	0.68	0.72	0.79
The product does not have a negative impact on animal populations	0.78	0.81	0.80	0.86
This product is produced in an anergy efficient manner	0.74	0.74	0.76	0.76

Note: The loading and error variance of Real were fixed to zero for Coffee as is appropriate to properly identify the model.

Table 2.3: Standardized Loadings of Latent Constructs on CPPS

	Standardized Loadings			
Dimension	**All Products**	**Milk**	**Granola**	**Coffee**
Real	0.67	0.79	0.73	1.00
Welfare	0.83	0.87	0.84	0.48
Environment	0.93	0.78	0.76	0.63

Note: The loading and error variance of Real were fixed to zero for Coffee as is appropriate to properly identify the model.

Table 2.4: CFA Second-Order Model Fit Statistics

Fit Statistics 2nd Order Model				
	All Products	**Milk**	**Granola**	**Coffee**
d.f.	74.00	74.00	74.00	75.00
chi-sq	534.54	389.40	33.57	405.63
RMSEA	0.08	0.11	0.10	0.11
CFI	0.98	0.96	0.96	0.95
NNFI	0.98	0.95	0.95	0.94
GFI	0.93	0.86	0.88	0.86
AGFI	0.91	0.81	0.84	0.81
SRMR	0.04	0.08	0.08	0.12

Table 2.5: Coefficient Alpha

Coefficient Alpha				
Dimension	**All Products**	**Milk**	**Granola**	**Coffee**
Real	0.90	0.91	0.89	0.90
Welfare	0.86	0.82	0.85	0.89
Environment	0.88	0.88	0.85	0.89

Table 2.6: Test of Discriminant Validity between Latent Constructs

Model Fit based on Bagozzi (1980) Procedure						
Model (Constrained Constructs)	**DF**	**Chi-Square**	**RMSEA**	**NNFI**	**CFI**	**Change chi-sq**
Baseline Model	74	534.54	0.08	0.98	0.98	
Model 1 (Real-Welfare)	75	2213.83	0.16	0.91	0.93	1679.29
Model 2 (Real-Environment)	75	2880.47	0.19	0.9	0.92	2345.93
Model 3 (Welfare-Environment)	75	1334.12	0.12	0.95	0.96	799.58

Note: In the constrained models, the correlation of the constrained constructs was set to 1.0 and the correlation of the other constructs was allowed to vary.

Table 2.7: Average Variance Extracted & Discriminant Validity between Latent Factors

Correlations, AVE and Test for Discriminant Validity			
All Products			
Dimension	Real	Welfare	Environment
Real	**0.70**	0.31	0.38
Welfare	0.56	**0.61**	0.59
Environment	0.62	0.77	**0.57**
Milk			
Dimension	Real	Welfare	Environment
Real	**0.71**	0.48	0.37
Welfare	0.69	**0.60**	0.46
Environment	0.61	0.68	**0.51**
Granola			
Dimension	Real	Welfare	Environment
Real	**0.68**	0.37	0.30
Welfare	0.61	**0.55**	0.41
Environment	0.55	0.64	**0.51**
Coffee			
Dimension	Real	Welfare	Environment
Real	**0.70**	0.23	0.40
Welfare	0.48	**0.44**	0.09
Environment	0.63	0.30	**0.64**

Note: AVE for each latent construct is reported on the diagonals. Below the diagonal is the correlation between the constructs. Above the diagonal are the squared correlations or the phi-elements.

Table 2.8: Regression Results from Study 1

Model	Willingness to Pay			Purchase Likelihood		
	Standardized Coefficient	***t*-Value**		**Standardized Coefficient**	***t*-Value**	
Constant	3.51	32.99***		5.1	36.05***	
Mindset	-0.24	-1.64*		-0.36	-1.85*	
CPPS	-0.01	-0.11		0.22	1.53	
Mindset*CPPS	0.36	2.44**		0.86	4.43***	
R^2			.07***			.29***
Adjusted R^2			.06***			.27***

Note: * significant at .10, ** significant at .05, *** significant at .01

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Appendix A: Construal Level, Firm Sustainability Reputation and Sustainability

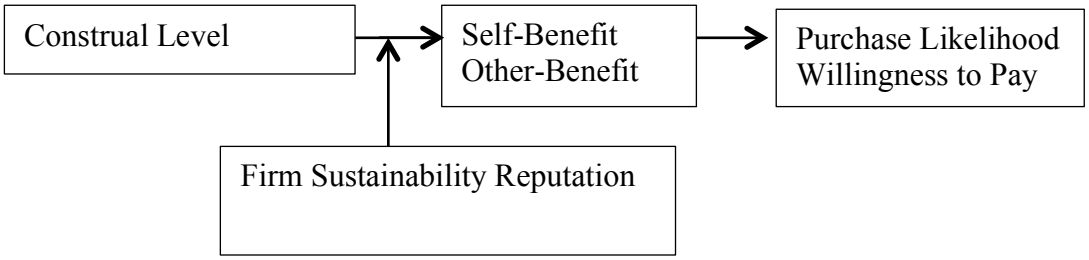

Figure A.1: Conceptual Model for Construal Level and Firm Sustainability Reputation

Table A.1: Construal Level Manipulation and Task Instructions

Concrete	Abstract
Manipulation: For everything we do, there always is a process of **how** we do it. Moreover, we often can follow our broad life-goals down to our very specific behaviors. For example, like most people, you probably hope to find happiness in life. **How** can you do this? Perhaps saving money for retirement can help. **How** can you save money for retirement? Perhaps by getting a raise at the end of the year. **How** can you get a raise? Perhaps by meeting your performance objectives. **How** can you meet your performance objectives? Perhaps by working on a project at work. This thought exercise is intended to **focus your attention on how you do the things you do**. Please think about your behavior in terms of the **steps** you follow. In the spaces below, you will be asked to list the means by which you could buy groceries. Start by answering the question: **HOW do I buy groceries?**	Manipulation: For everything we do, there always is a reason **why** we do it. Moreover, we often can trace the causes of our behavior back to broad life-goals that we have. For example, you may be working on a project at work. **Why** are you doing this? Perhaps to meet your performance objectives. **Why** are you meeting your performance objectives? Perhaps to get a raise at the end of the year. **Why** get a raise at the end of the year? Perhaps to save money for retirement. And perhaps you wish to save money for retirement because you feel that doing so can bring you happiness in life. This thought exercise is intended to **focus your attention on why you do the things you do**. Please think about your behavior in terms of your broad life-goals and values. In the spaces below, you will be asked to list the ways that buying groceries could help you meet important life goals. Start by answering the question: **WHY do I buy groceries?**
Task Instructions: You are in your local grocery store shopping. Research has shown that shoppers make the best decisions about which product to buy when they think about purchase decisions in terms of the **immediate impact**. As you examine the product shown on the following pages consider your **routine** and **how** you use a particular product and the **steps** to purchase and consume the product. Also consider **how** a particular product fits with **your use**.	Task Instructions: You are in your local grocery store shopping. Research has shown that shoppers make the best decisions about which product to buy when they think about purchase decisions in terms of the **big picture**. As you examine the product shown on the following pages consider the **meaning** behind **why** you choose a particular product and the **broader consequences** of purchasing and consuming the product. Also consider **why** a particular product fits with your **values**.

Table A.2: Scales

Scale	Items
Firm Sustainability Reputation Manipulation Check	- The companies have a reputation for being socially responsible. - The companies have a reputation for caring about the environment.
Purchase Likelihood (Peloza and White 2009)	- How likely are you to purchase the milk shown above? (1 = "Very Unlikely," 7 = "Very Likely") - How willing are you to purchase the milk shown above? (1 = "Very Unwilling," 7 = "Very Willing") - How inclined are you to purchase the milk shown above? (1 = "Very Uninclined," 7 = "Very Inclined")
Self-Benefit	- This product is tasty. - This product is enjoyable to eat. - This product is good for my health.
Other-Benefit	- This product does not harm the environment. - This product does not hurt plant or animal life. - There are no hazardous materials made in the production, use or disposal of this product.

Note: (R) indicates reverse coded items. Unless otherwise noted, all scales were measured using a 7-point scale (1 = "Strongly Disagree," 7 = "Strongly Agree").

Appendix B: Questionnaire for Consumer Perceptions of Sustainable Food

1. What do you think of when I say sustainable food?
    a. Any particular types of products?
    b. Any particular brands/firms/retailers?
2. What characteristics do you think a sustainable food item should have?
3. If not able to generate any characteristics, ask about the characteristics below and what constitutes each
    a. Real
    b. Health/Nutrition
    c. Welfare (Social/Animal)
    d. Environment
4. Which of these is most important to you in making a purchase decision?
5. Do you consider organic and/or fair-trade food items to be sustainable?
6. Does the use of pesticides factor into your consideration of what is sustainable? Why (personal health/environmental impact)?
7. Do you feel like products made by firms whose missions are based on sustainable principles are more sustainable than those made by traditional firms?

Table B.1: Respondent Quotes from Questionnaire for Perceptions of Sustainable Food

Gender	Age	Children	1	1a	1b	2	3a	3b
Female	44	Yes	Products that can provide for multiple over a long period of	Vegetables/fruits grown in controlled environment, fish or	None come to mind – urban fish farms, shellfish farms	Nutrition, lack of chemicals and toxic characteristics, length of	Not synthetic – no preservatives or additives	Containing essential vitamins and nutrients – not sugar, preservatives
Female	34		no negative impact on the earth, earth-friendly packaging, no animal	anything	no		not man made	nothing that contributes towards common human dietary problems
Female	35	Yes		*Fruits and Vegetables. Food that you can reproduce and grow yourself and have control over the process.*	*Farmers Markets, Whole Foods, Fresh Market, Co-Ops, Garden supply centers where you can buy seeds.*	*Vine Ripened, Pesticide Free, Hormone Free, Locally Grown, Grown in the USA or Organic.*	*Not GMO, Hormone Free*	*Food that is good for your body, good fats, natural sugar*
Female	65	Yes		I think of fruits and vegetables locally grown	Usually Whole Foods retailer as well as food that is minimally	It should not be overly processed or enriched with names no one can	Real means nature's way, not artificial preservatives	A listing of vitamins, protein, caloric content, cholesterol,sodium etc.
Female	28			Meat and produce. They grow/plant as	No	They grow/plant as many as they sell		
Female	37		Protein, protein, protein	Fish, salmon, tuna, skinless baked chicken, raw or slightly steamed fresh organic veggies, raw honey and			To me "real" means nothing that has been chemically enhanced. No crop dusting no steroids or growth	protein and fresh vegetables
Male	65	Yes	Foods that provide nutrition for living while	Dried foods, packaged foods, canned & frozen	Nature's Balance, Kellogs, Post, Ensure	Good taste, nutrition, freshness	Natural	Necessary

Gender	Age	Children	3c	3d	4	5	6	7
Female	44	Yes	Environment raised – manner fed, products the animals are fed,	Environment raised – manner fed, products the animals are fed,	Lack of preservatives, sugar, salt, toxic environment	Yes. If the approach for raising or producing is controlled and outcome	Yes. If pesticides are used, the product is affected and the	Yes. Sustainability has to be considered for long term growth, diversity
Female	34		animals are humanely treated and not fed any horomones or	minimal pollution - natual pollution like cow flatulence	cost v. benefit reasonable - unless I feel like it is better for me	yes	yes - primarily due to personal impact. Children have a lot of	situational
Female	35	Yes	*Food that is cared for properly, animals that are treated humanely and not fed hormones and live in*	Fresh water, vine ripened, cage free	*Not a GMO and Hormone & Pesticide Free.*	*Yes*	*Yes*	*Yes, I feel like large corporations are in it for mass production and profit. They grow and process their*
Female	65	Yes	Animal should not have been subjected to routine torture prior to	Not damaging to the environment ie. Cutting down rainforest to	Now I eat only free range chicken and seafood occasionally so	It is my understanding that organic in the US means no chemicals in	Absolutely	I would have to investigate if principles really translates into
Female	28				Health/Nutrition	Not sure, not necessarily.	No. but this question is leading b/c the part in	I'd assume and hope so
Female	37		If we raise healthy animals the fertilize the ground with healthy chemical free shit (to put it bluntly.) We, in		Honestly I think it's all important and all linked. My health and the health of my loved ones are most important, but I	I do	We have actually done tests to compare organic food against your regular run of the mill processed foods.	Hummmm I think any firm that's sole principle is based on the sustainable principles are indeed more sustainable
Male	65	Yes	Healthy, Progressive, Safe	Low impact on nature and populations	Nutrition	No	Yes…Could have near and long term negative	YES

Appendix C: Scale Development Study Stimuli

Appendix D: Study 1 Product Sustainability (Conventional v. Sustainable) Manipulations

Appendix E: Study 2 Product Sustainability and Product Type (Utilitarian v. Hedonic) Manipulations