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ORIGINAL PAPER

Price? Quality? Or Sustainability? Segmenting by Disposition Toward Self-other Tradeoffs Predicts Consumers' Sustainable Decision-Making

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Abstract

Current research suggests consumers trade off price, quality, and sustainability attributes when making choices. Prior studies have typically focused on product attribute dyads, rather than multiattribute decision-making in the sustainability context. For scholars and practitioners, understanding which attributes are more important to consumers in tradeoff contexts has been a challenge. Self-other orientation may play a significant role in predicting consumers' sustainable choices. We use prior research on equity sensitivity to demonstrate that segmenting consumers by their disposition to self-other tradeoffs (i.e., their self-other orientation) helps predict price–quality–sustainability tradeoffs. We hypothesize and test how members of these equity sensitivity segments tradeoff price, quality, and sustainability attributes in consumption decisions. Through four conjoint studies featuring diverse product assortments and sustainability issues, we find that price provides high utility for Entitled consumers, while sustainability provides high utility for Benevolent consumers. When product attributes are combined, Benevolents are more likely than Entitleds to purchase sustainable products. We also demonstrate that, in the absence of product choices, Equity Sensitives are more willing to choose a sustainable option over a conventional option, even when prices are high. In light of these findings, we discuss the implications for scholars looking to broadly predict consumers' sustainable choices and for firms looking to target consumers with consumer-centric sustainability strategy.

Keywords Self-other orientation · Equity sensitivity · Consumer segmentation · Sustainability · Prosocial consumption · Ethical decision-making · Conjoint analysis

Current research suggests consumers trade off price, quality, and sustainability attributes when making choices. In the 2018 Cone/Porter Novelli Purpose Study, 88% of American respondents claimed they would purchase from a sustainable, or social/ecological purpose-driven, company. In the same survey, 66% of respondents said they would switch purchasing from a company whose products they normally buy to a more sustainable company. Further, 57% of respondents claimed they would pay more for a product from the sustainable company. Although consumers increasingly indicate sustainability is an important attribute used to make purchase choices, some consumers regard price and quality with greater importance in decision-making (Nielsen 2015). Discrepancies between consumers' expressed and revealed attribute importance make it difficult for marketing managers to plan for demand and promote their sustainable products to appropriate target audiences. Sustainability may play an increasingly significant role in consumer choices, but it is not the only motivation behind how these choices are made. In this paper, we assert that a consumer's self-other orientation, which is a disposition toward self-other tradeoffs, can help marketers predict individual-level sustainability choices.

Prior studies have typically focused on product attribute dyads, rather than multiattribute decision-making in the sustainability context (Olson 2013; Simpson and Radford 2014). For example, research yields insight on the relationships between price and quality (Grewal et al. 1998; Zeithaml 1988), price and sustainability (De Pelsmacker et al. 2005; Trudel and Cotte 2009), and quality and sustainability (Lin and Chang 2012; Luchs et al. 2012; Luchs and

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Kumar 2017). While it is still important to understand these dyadic attribute relationships, consumers factor multiple product attributes at a time into their purchase choices. For practitioners looking to innovate their marketing mix, it is important not only to know how these attributes combine to inform sustainable consumer choice, but to also understand how attribute tradeoffs are congruent with consumers' self-other orientation.

For scholars and practitioners, understanding which attributes are more important to consumers in tradeoff contexts has been a challenge. Prior research proposes different sustainability segmentation schemes related to consumer attitudes (Ginsberg and Bloom 2004; Iyer and Banerjee 1993; Minton and Rose 1997) and values (Balderjahn et al. 2018; Haws et al. 2014; Shiu and Shaw 2003), however these typologies fail to incorporate the self-other tradeoffs that motivate consumers' decision-making. Rather than focusing on motivational disposition, these typologies predict sustainability choice preferences based on rational economic behavior, leaving a gap between expressed attitudes and behaviors (Carrington et al. 2010; Hassan et al. 2016). Further, these segmentation schemes typically do not generalize across multiple sustainability contexts. Instead, they are limited to explaining either social or ecological sustainability. Research has not yet determined how segmenting consumers based on their self-other orientation reflects on their sustainable marketplace tradeoffs.

The SHIFT (Social influence, Habit formation, Individual self, Feelings and cognition, and Tangibility) framework of sustainable consumer behaviors (White et al. 2019) proposes that self-other tradeoffs play a significant role in predicting sustainable consumer choice. If so, can segmenting consumers by self-other orientation predict decision-making tradeoffs between the price, quality, and sustainability attributes of products? To address this question, we segment by self-other orientation to predict the relative importance of price, quality, and sustainability across a range of product categories and sustainability issues. We use a segmentation scheme based on individual differences in responses to the equity sensitivity index (Ross and Kapitan 2018), an instrument that uses equity to operationalize self-other tradeoffs. As defined by Ross and Kapitan (2018), equity is when consumers balance perceived fairness for themselves and for society in marketplace exchanges. Perceived unfairness is a function of the self-other orientation that motivates consumers' purchasing decisions. Based on a measure of consumer equity sensitivity, individuals can be classified into one of three market segments: Benevolents (high societal, low self-orientation), Equity Sensitives (balanced societal and self-orientation) and Entitleds (low societal, high self-orientation). Drawing on this research, we hypothesize and test how members of these segments tradeoff price, quality, and sustainability attributes in consumption decisions.

Our research makes the following contributions. First, we demonstrate that segmenting consumers by their disposition toward self-other tradeoffs (i.e., their self-other orientation) helps predict price–quality–sustainability tradeoffs. Through four conjoint studies featuring diverse product assortments and sustainability issues, we find that price provides high utility for Entitled consumers, while sustainability provides high utility for Benevolent consumers. When product attributes are combined, Benevolents are more likely than Entitleds to purchase sustainable products. A market share simulation serves as a robustness check to validate these findings. Second, we show that, when considering a single available product option, Equity Sensitives are more willing to purchase a sustainable option over a conventional option (a product absent of sustainability attributes; Mazar and Zhong 2010; Olson 2013)—even when prices are high. Managerially, the results suggest a strategy where marketers pursue the sizeable Equity Sensitive segment in order to accomplish both financial and sustainability goals. Finally, we discuss the implications for firms looking to target consumers with consumer-centric sustainability strategy (Hamilton 2016; Sheth et al. 2011; White et al. 2019).

Segmenting Consumers by Self-other Orientation

The literature provides various contours to the definition of a "sustainable consumer." For example, Harrison et al. (2005, p. 2) define this consumer as "concerned with the effects that a purchasing choice has, not only on themselves, but also on the external world around them." Carrington et al. (2010, p. 140) write that "ethically minded consumers feel a responsibility towards the environment and/or to society, seeking to express their values through ethical consumption and purchasing." Further, Papaoikonomou et al. (2016) employ a social identity-theoretic approach, finding ethical consumer identity is defined by a consumer's in-groups and out-groups, is dynamic, and is re-negotiated through consumption behaviors. Core values that are shared by the in-group, and therefore differentiate from the out-group, include "the perceived existence of real ethical concerns with regards to the sustainability and fairness of the modern economic system, the perceived willingness to take action by becoming involved in a range of ethically perceived initiatives, and the commitment to lead lifestyles coherent with ethical beliefs" (Papaoikonomou et al. 2016, p. 217). However, these consumer profiles offer limited empirical assessment of how self-other orientation affects sustainable consumption choices.

Other research segmenting consumers by sustainability tends to narrowly focus on attitudes toward ecological sustainability. Prior segmentation schemes address sustainable

consumption contexts such as self-efficacy in ecological segmentation (i.e., browns, true-blue greens: Ginsberg and Bloom 2004; Iyer and Banerjee 1993; Minton and Rose 1997), green values (Haws et al. 2014; Shiu and Shaw 2003), or triple bottom line values (Balderjahn et al. 2018). Approaching consumer segmentation as a function of values and attitudes presumes consumers rationally include sustainability as part of their purchase decisions. However, various studies highlight issues with using attitudes to predict sustainable behavior, such the gap between sustainability intentions and behaviors (Carrington et al. 2010, 2014; Gleim and Lawson 2014; Hassan et al. 2016). Carrington et al. (2014) provide several explanations that could resolve the "intention gap," including prioritization of ethical concerns, implementation plans, willingness to sacrifice, and actual shopping behaviors.

Marketing lacks a consumer segmentation scheme that accommodates what Devinney et al. (2010, p. 85) describe as "heterogeneity in the degree to which social features matter." Consumers are motivated by a broad scope of sustainability issues, from labor relations to carbon emissions, yet using narrow segmentation schemes makes it difficult to predict broad dispositions toward sustainable consumption. The extant typologies focus narrowly on ecological sustainability, rather than the broad sustainability that Lunde (2018, p. 94) defines as "lowering harm to the environment and ethically and equitably increasing the quality of life (QOL) and well-being of consumers and global stakeholders, presently and for future generations." In one of the few typologies of "responsible consumers," Giesler and Veresiu (2014) theorize the market's institutional processes socialize consumers along four different issues: bottom-of-the-pyramid, green, health-consciousness, and financial literacy. Firms need to align corporate social responsibility goals with targeted marketing strategy (Auger et al. 2003; Devinney et al. 2010; Hamilton 2016; Sen and Bhattacharya 2001), yet current segmentation schemes are limited in scope. Instead of attempting to predict sustainable consumer choice as a function of narrow values or attitudes toward sustainability, is it possible to predict choice as a function of consumers' broad self-other orientations (White et al. 2019)?

Rather than focus on consumer interest in (or apathy toward) sustainability issues, we argue it is more appropriate to segment consumers by their self-other orientation. Equity theory postulates consumers perceive equity, or fairness, in exchange when the benefits of exchange are equal to the costs (Adams 1963, 1965). Equity sensitivity, an extension of this theory (Huseman et al. 1987; King and Miles 1994; Ross and Kapitan 2018), proposes individuals are sensitive to equity in self-other tradeoffs, relative to the market. Perceptions of marketplace equity affect self-other tradeoffs within an individual's mental "portfolio" of marketplace behaviors and motivate sustainable choices when this "portfolio" feels imbalanced. Ross and Kapitan (2018) measure equity sensitivity in consumer dispositions toward self-other marketplace tradeoffs and validate this segmentation scheme based on these dispositions. The research finds some consumers are consistently oriented toward the self in these tradeoffs, while other consumers are oriented toward society (others). However, most consumers balance society's interests with their own, providing opportunity for marketing strategy.

To measure equity sensitivity, an instrument consisting of five questions asks respondents to allocate points (tradeoff) between self-oriented and other-oriented responses to marketplace exchanges (Huseman et al. 1987; King and Miles 1994; Ross and Kapitan 2018). The result is a societal-oriented score used to classify respondents into one of three market segments: Benevolents (high societal, low self-orientation), Equity Sensitives (balanced societal and self-orientation) and Entitleds (low societal, high self-orientation). While research supports using the equity sensitivity index in the consumer literature (Ross and Kapitan 2018), it has not been used to assess how equity sensitivity segmentation explains the tradeoffs consumers make when deciding among sustainable product combinations. Since Equity Sensitives balance self-other orientation, we theorize their tradeoff decisions can be influenced if a firm generates value toward either the self-benefit or other-benefit extremes. This highlights the importance of whether product attributes appeal to self or other in sustainable consumption contexts. For marketers to develop their marketing mix strategies, we establish how segmenting by self-other orientation aligns with preferences for product attributes in sustainable consumer choice.

Self-other Orientation Impacts Preferences for Price–Quality–Sustainability Product Attributes

Consumer tradeoff literature typically focuses on dyadic relationships between product attributes such as price and quality (Grewal et al. 1998; Zeithaml 1988), sustainability and quality (Lin and Chang 2012; Luchs et al. 2010, 2012), or price and sustainability (De Pelsmacker et al. 2005; Trudel and Cotte 2009). While an in-depth understanding of these dyadic relationships is important, more research is needed on multiattribute decision models in sustainability contexts. Olson (2013) models compensatory attributes specifically in the green product decision-making context. Luchs and Kumar (2017) look at sustainability tradeoffs between hedonic (aesthetic) and utilitarian (performance) attributes, finding consumers more likely to trade-off sustainability for hedonic, rather than utilitarian attributes. We build upon these efforts, which examine utilitarian

(blenders, calculators) and hedonic (digital audio players) tradeoffs in the context of firms' corporate social responsibility activities.

We also expand the prior multiattribute tradeoff research (Luchs and Kumar 2017; Olson 2013; Simpson and Radford 2014) by limiting the scope of product *attributes* while also broadening the scope of product *assortment* and *sustainability issues* for greater generalizability. Doing so allows us to consistently predict how homogeneously and discretely segmenting consumers by self-other orientation (Benevolents, Equity Sensitives, Entitleds) aligns with heterogeneous attribute preferences in sustainable choice contexts. As price, quality, and sustainability provide varied self-other value in exchange, we expect the consumer segments will differ in their utility for product attributes. Since Equity Sensitives balance both self and other in their self-other orientation, we draw attention to the differences in attribute preferences between Benevolents (high societal-orientation) and Entitleds (low societal-orientation).

Consumer Perceptions of Price

Marketing literature has long assessed the strong correlation between price and perceived product quality as a signal of consumer value (Völckner and Hofmann 2007). Pricing serves both informational (cueing) and allocative (constraining) functions for consumers to attach value judgments of exchange (Rao and Sattler 2000). Money is one of few fungible consumer resources that can be converted to moral benefit (Bradford 2015). Because of the fungibility of money, consumers are inherently price sensitive, using money to purchase products that yield the best-perceived value, regardless of sustainability. The value consumers anticipate from paying a price is linked to their abilities to derive utility and satisfaction from a product. As a result, the perceived value of price varies across consumers' choice preference structures (Xia et al. 2004). Price foremost serves an allocative function, as it facilitates mental accounting of a consumer's personal gains and losses in value exchange (Rao and Sattler 2000), thereby benefitting the self.

As consumers differ in their self-other orientations, we hypothesize sensitivity to price is a function of high self-orientation. Xia et al. (2004) find consumers vary in their perceptions of price fairness, which implies segmentation by self-other orientation will demonstrate differences in price utility. In particular, the low societal-orientation consumer segment (Entitleds) will demonstrate higher sensitivity to maximizing self-benefit and therefore, price utility. In contrast, the high societal-orientation consumer segment (Benevolents) will demonstrate lower sensitivity to maximizing self-benefit and be comparatively less affected by the utility of price.

Hypothesis 1 Entitled consumers will have higher utility for price than Benevolent consumers.

Consumer Perceptions of Quality

Perceived quality is an outcome of marketing exchange that results from a product or service meeting or exceeding consumption expectations (Zeithaml 1988). The greater the subjective magnitude of difference between actual and expected outcomes, the higher the product quality and the more consumers personally benefit from product consumption. Although quality is highly correlated with price (Monroe and Dodds 1988), various product attributes such as country-of-origin (Teas and Agarwal 2000), level of advertising (Erdem et al. 2008), and brand name (Brucks et al. 2000) also provide signaling cues of quality and influence consumers' quality perceptions. Several studies establish perceived quality as an attribute that predicts consumer purchases and subsequent post-purchase satisfaction (Völckner and Hofmann 2007; Zeithaml 1988). The value consumers anticipate from quality is also linked to their personal abilities to derive utility and satisfaction from a product. As a result, consumers have come to anticipate quality as a self-oriented benefit of consumption.

As consumers differ in their self-other orientations, we hypothesize sensitivity to perceived quality is a function of high self-orientation. Research on the moderating effects of individual differences on perceived quality (Lichtenstein and Burton 1989) implies consumers also differ in their utility for quality. We argue the low societal-orientation consumer segment (Entitleds) will demonstrate higher sensitivity to maximizing self-benefit and therefore, to the utility of quality. In contrast, the high-societal-orientation consumer segment (Benevolents) will demonstrate lower sensitivity to maximizing self-benefit and be comparatively less affected by the utility of quality.

Hypothesis 2 Entitled consumers will have higher utility for quality than Benevolent consumers.

Consumer Perceptions of Sustainability Relating to Price and to Quality

Sustainability helps convert consumers' fungible resources (money) into societal outcomes a consumer could not otherwise create without marketplace exchange (Bradford 2015). Consumer value in sustainability consumption may be morality-based or values-based, pointing to economic rationales of sustainable consumption choice. Sustainability issues range from ecological sustainability (e.g., repurposing manufacturing materials) to social sustainability (e.g., donating profits to K-12 educational grants), leaving room for consumer heterogeneity in sustainability interest (Devinney et al. 2010).

Consumer demand for products with sustainable attributes has led to an increase in marketing studies of various social dimensions, since these attributes cue consumers into societal benefit (Auger et al. 2008; De Pelsmacker et al. 2005; Devinney et al. 2010). Consumers have come to anticipate the benefit of sustainability as a societally-oriented benefit of consumption.

Prior literature highlights boundary conditions on how consumers factor sustainability attributes into their choice preference structures. Research by Irwin and Naylor (2009) finds ethical attributes are weighted more in consumers' exclusion versus inclusion consideration sets. Additional studies look at sustainability in the perceived quality context, finding that consumer perceptions of green products belie product quality in favor of a "sustainability gap" (Lin and Chang 2012; Luchs et al. 2010). Other research assesses consumers' inclinations to choose sustainable products under different pricing circumstances (Auger et al. 2003). For instance, in a study by De Pelsmacker et al. (2005) of whether or not Belgian consumers would pay more for fair-trade coffee, half of the participants considered the fair-trade label an important factor in their purchase decision, but only 10% were willing to pay a price premium, suggesting the value of sustainability varies in consumers' choice structures. Luchs and Kumar (2017) conclude similarly that consumers are more likely to trade off sustainability the context of hedonic (versus utilitarian) sustainable products. Olson (2013) also finds evidence supporting the variability of ecological sustainability factoring into consumer choice for ecologically green products. The heterogeneity of sustainability issues spans product categories, yielding societal benefit through sustainable product attributes such as renewable materials or fairly-compensated labor.

As consumers differ in their self-other orientations, we hypothesize sensitivity to sustainability is a function of high societal-orientation. Individual differences in perceptions about sustainability imply consumers differ in their utility for sustainability (Auger et al. 2008; Devinney et al. 2010; Olson 2013). We argue the low societal-orientation consumer segment (Entitleds) will demonstrate lower sensitivity to maximizing societal-benefit and therefore, to the utility of sustainability. In contrast, the high societal-orientation consumer segment (Benevolents) will demonstrate higher sensitivity to maximizing societal-benefit and be comparatively more affected by the utility of sustainability.

Hypothesis 3 Entitled consumers will have lower utility for sustainability than Benevolent consumers.

Self-other Orientation Impacts Multiattribute Decision-Making in the Price–Quality–Sustainability Context

Market research routinely demonstrates consumers are interested in sustainable consumption, yet there is a disconnect between expressed and actual choice preferences (Cone/Porter Novelli 2018; Nielsen 2018). How do consumers factor multiple attributes into their choice preferences? Is a broad "ethical consumer" truly a myth (Devinney et al. 2010)? Or is there an alternate explanation of why consumers make these tradeoffs? Although most research on product attributes focuses on attribute dyads, consumers simultaneously weigh multiple attributes when making product decisions. An explanation of how consumers incorporate these product attributes in their choice preference structures is needed to better explain sustainable consumption.

Literature on the dyadic relationships between product attributes offers a patchwork of insight on sustainable consumer choice. Past research has already demonstrated the interaction between price and quality plays a critical role in determining consumers' purchase likelihood (Monroe and Dodds 1988; Rao and Monroe 1989; Zeithaml 1988). Studies also demonstrate sustainable products are expected to command a higher price premium than conventional products (De Pelsmacker et al. 2005; Trudel and Cotte 2009). Additionally, Mohr and Webb (2005) argue if comparable products are equal, save for sustainability, sustainability adds value to the product and customers expect to pay a higher price. However, their results find no significant interaction between a product's sustainability and price on purchase intent. Research on the sustainability-perceived quality relationship frequently finds the two attributes as negatively related. Luchs et al. (2010) find consumer evaluations of the efficacy of sustainable products are depressed, as sustainability is perceived as related to gentleness, rather than strength. Further evidence from Lin and Chang (2012) find consumers perceive sustainable products as having reduced product effectiveness and consume sustainable products at a higher rate. In his work on multiattribute sustainability models, Olson (2013) analyzes tradeoffs between conventional and sustainable products. The findings indicate significant differences between conventional consumption choice structures and ecological sustainability choices. However, the research does not account for what motivates consumers to make these tradeoffs in the broad context of consumption alternatives.

We theorize self-other orientation is important in explaining how consumers incorporate price, quality, and sustainability attributes *together* in their choice preference structures. As hypothesized in the preceding section,

self-other orientation uniquely impacts consumer utility for each product attribute. Regardless whether the sustainability attribute is perceived as a product augmentation (extrinsic to product design, packaging, or labeling) or embedded in the product itself (intrinsic to product design), consumers tradeoff self- and societally-oriented attributes in their decisions. The equity sensitivity index, previously used to segment consumers by self-other orientation (Ross and Kapitan 2018), predicts multiattribute choice preference structures across a broad array of product assortments and sustainability issues.

The tradeoff between consumers' orientation toward self (more aligned with price and quality attributes) and orientation toward society (more aligned with sustainability attributes) will affect actual choice preferences. Products with a low price or high quality—both attributes that generate higher personal utility—will have increased appeal to Entitleds, since Entitleds are more self-oriented. When faced with price and quality tradeoffs, Entitleds will be overall more likely to choose a conventional product (a product absent of sustainable attributes), maximizing self-benefit, in contrast with a sustainable product. We also argue that since Benevolents are more societally-oriented, they should be less likely than Entitleds to choose a conventional product in any decision context.

Hypothesis 4 Entitleds are more likely than Benevolents to make a conventional product choice.

Conversely, products that are sustainable—an attribute that generates higher societal utility—will have decreased appeal to Entitleds, since Entitleds are less societally-oriented. We predict when faced with price and quality tradeoffs, Entitleds will be overall less likely to choose a sustainable product unless they still receive self-benefit (low price or high quality). Since Benevolents are more societally-oriented, they should be more likely than Entitleds to choose a sustainable product in any decision context.

Hypothesis 5 Entitleds are less likely than Benevolents to make a sustainable product choice.

In contrast with Benevolents (high societal, low self-orientation) and Entitleds (low societal, high self-orientation), Equity Sensitives maintain a balanced self-other orientation. This means the utilities of product attributes are assumed equal for Equity Sensitives. As a result, Equity Sensitives will value a high price × low quality × sustainable product equal to a low price × high quality × conventional product and their willingness to purchase each of these multiattribute product arrangements will also be equal. However, Ross and Kapitan (2018) describe the disposition toward self-other tradeoffs as motivated by an imbalanced mental "portfolio" of marketplace behaviors. When Equity Sensitives feel this mental "portfolio" has skewed toward self-interest, they may weigh sustainability as more important in decision-making. Alternately, when the mental "portfolio" has skewed toward societal-interest, Equity Sensitives may weigh sustainability as less important in decision-making. In either instance, by balancing the disposition toward self-other orientation, Equity Sensitives may be influenced by state factors. Product context factors, such as choice architecture and individual differences regarding social desirability, will affect attribute weights for Equity Sensitives. Given this theoretical indeterminacy, we present competing hypotheses to examine value for Equity Sensitives, while controlling for social desirability.

Hypothesis 6a When considering a single available product option, Equity Sensitives are more willing to purchase a high price, low quality, and sustainable product than to purchase a low price, high quality, and conventional product.

Hypothesis 6b When considering a single available product option, Equity Sensitives are less willing to purchase a high price, low quality, and sustainable product than to purchase a low price, high quality, and conventional product.

Study 1: Conjoint Analyses of Product Attributes by Equity Sensitivity Segment

Method

We conducted four full-profile conjoint studies in a 2 (price) × 2 (quality) × 2 (sustainability) design to test the hypotheses; conjoint analyses were run for four product categories—coffee, cereal, blue jeans, and coffee tables—to determine partworth utilities for the price, quality, and sustainability factors. Coffee and cereal were chosen to represent typically lower-involvement products while jeans and coffee tables were selected to represent typically higher-involvement products. Similar to the method employed in Ross and Kapitan (2018), we first used *K*-means cluster analysis to segment participants' self-other orientation into Benevolent, Equity Sensitive, and Entitled segments. Next, we tested the hypotheses using planned comparisons of the partworths between the Entitled and Benevolent segments. To further generalize the predictive power of the segmentation variable, we ran five discrete choice tasks to see if inclusion of the segmentation variable contributed explanatory power. Finally, we calculated a series of market share simulations as a robustness check to demonstrate how different combinations of product attributes could alter market shares in practice.

Data were collected from Amazon mTurk participants in return for monetary compensation. From the 1186 responses collected, the data were cleaned to remove 43 invalid responses, which were a combination of incomplete and straightlined responses. The total sample retained for analysis was 1143 cases. The sample sizes for each conjoint study was coffee (287), blue jeans (282), table (285), and cereal (289). Overall, the sample was 50.6% female, mean age of 32.9 years, 83.1% Caucasian, and 41.1% with more than four years of college education.

The instrument first had participants fill out the equity sensitivity index (ESI). The participants were randomly assigned to only *one* of the four conjoint studies representing different product categories. After completing the conjoint studies, all participants responded to the same five discrete choice tasks. Finally, participants completed social desirability measures and demographic questions.

Survey Measures

Used to segment consumers by sensitivity to marketplace fairness, the equity sensitivity index (ESI) is composed of five questions—each with two constant-sum response items (one societally-oriented Benevolent response and one individually-oriented Entitled response). For each question, participants are asked to allocate 10 points between the two options, to determine the participant's self-orientation versus their societal-orientation. The points allocated for the Benevolent responses are then summated across the five questions. Therefore, ESI scores range from 0 (very entitled) to 50 (very benevolent). ESI reliability in this survey was calculated at coefficient α of 0.87. Social desirability was also measured using the 33-item Marlowe–Crowne scale (Crowne and Marlowe 1960). Reliability was calculated at 0.84.

Conjoint Studies

Each of the four between-subject conjoint categories (coffee, cereal, blue jeans, coffee table) was chosen to represent a variety of price ranges, functions, and sustainability issues. These attributes were taken from marketplace observations in order to represent both low/high price, quality, and sustainability feature levels. For the coffee condition, the three factors and levels were: price ($1.29, $2.89), quality (average, high), and sustainability (not fairtrade, fairtrade). For the cereal condition, the three factors and levels were: price ($2.49, $5.49), quality (standard, high), and sustainability (doesn't donate to charity, donates a portion of profits to heart disease charity). For the blue jeans condition, the three factors and levels were: price ($29.99, $99.99), quality (average, high), and sustainability (made in a sweatshop, sweatshop-free). For the coffee table condition, the three factors and levels were: price ($34.99, $69.99), quality (average, high), and sustainability (unsustainably logged wood, sustainably farmed wood). Manipulation checks of the price and sustainability attributes was assessed using the following scales comparing high and low price (1 = inexpensive; 5 = inexpensive) and the two sustainability statements (1 = conventional; 5 = sustainable). The means of the price and sustainability attribute levels for each conjoint study are shown in Table 1. *t*-tests of the price and sustainability attribute levels demonstrated the manipulations were statistically significant at the $p = 0.000$ level.

The dependent variable was a 10-point scale of purchase likelihood (1 = Extremely Unlikely; 10 = Extremely Likely). The eight scenarios presented within each conjoint study were randomized for each participant to avoid order effects. The conjoint scenario variables and levels for each product category are also shown in Table 1.

Discrete Choice Tasks

Each of the five discrete choice tasks offered a choice between product A (high price × low quality × sustainable) and product B (low price × high quality × conventional) for five different product categories of varying involvement and functionality (shampoo, sofa, gold watch, shoes, potato chips). The display order of the product choices was randomized for each participant to avoid order effects. The attribute levels and scenario text for each discrete choice task are shown in Table 2.

Analysis

Following the validated procedure of Ross and Kapitan (2018), a *K*-means cluster analysis of the ESI scores was first used to group participants into one of three segments (see "Appendix 1" for details). Prior research (Huseman et al. 1987) suggests equity sensitivity segments may be sample-specific, leading us to perform the clustering procedure prior to further analyses. This resulted in 212 participants in the Benevolent segment (18.5%; $M_{BEN} = 37.38$, $SD_{BEN} = 5.36$), 691 participants in the Equity Sensitive segment (60.5%; $M_{EQS} = 25.19$, $SD_{EQS} = 3.08$), and 240 participants in the Entitled segment (21.0%; $M_{ENT} = 13.88$, $SD_{ENT} = 5.16$). Across all participants, the score range for the Entitled segment was 0–19, for Equity Sensitive was 20–31, and for Benevolent was 32–50. Across all participants, there were no significant group differences in ESI scores by gender [$F_{(1, 1141)} = 0.00$, $p > 0.05$], age [$F_{(53, 1089)} = 0.92$, $p > 0.05$], education [$F_{(7, 1135)} = 0.38$, $p > 0.05$], income [$F_{(8, 1134)} = 1.77$, $p > 0.05$], ethnicity [$F_{(1, 1141)} = 0.01$, $p > 0.05$], or race [$F_{(5, 1137)} = 1.82$, $p > 0.05$].

Next, for each conjoint study, individuals were randomly assigned to a product class category, *j* (coffee, cereal, blue

Table 1 Attribute levels for the conjoint scenarios

Product category	Price ($)	Price evaluation (1 = low; 5 = high)[a]		Sustainability	Sustainability evaluation (1 = low; 5 = high)[a]		Quality	Example scenario (1 = extremely unlikely; 10 = extremely likely)
		M	SD		*M*	SD		
Coffee	1.29	2.20	1.03	Not fairtrade	2.34	0.80	Average	How likely would you be to buy coffee that is $1.29 for a medium cup, is of average quality, and is not fairtrade?
	2.89	4.20	0.76	Fairtrade	4.26	0.82	High	
		$t(286) = 33.65$			$t(286) = 23.16$			
Blue jeans	29.99	2.16	0.92	Made in a sweatshop	1.74	0.82	Average	How likely would you be to buy blue jeans that are $29.99, are of average quality, and are made in a sweatshop?
	99.99	4.74	0.50	Sweatshop-free	4.47	0.78	High	
		$t(281) = 48.57$			$t(281) = 31.93$			
Coffee table	34.99	2.20	0.96	Unsustainably logged wood	2.16	0.81	Average	How likely would you be to buy a coffee table that is $34.99, is of average quality, and is made from unsustainably logged wood?
	69.99	3.80	0.87	Sustainably farmed wood	4.27	0.77	High	
		$t(284) = 31.91$			$t(284) = 26.79$			
Cereal	2.49	1.90	0.81	Doesn't donate to charity	3.01	0.66	Standard	How likely would you be to buy cereal that is $2.49 for a box, is of standard quality, and the cereal company doesn't donate to charity?
	5.49	4.67	0.63	Donates a portion of profits to heart disease charity	4.19	0.76	High	
		$t(288) = 52.85$			$t(288) = 20.54$			

[a]All *t*-tests significant at $p = .000$

Table 2 Attribute levels for the discrete choice tasks

	Choice A (high price, low quality, sustainable)	Choice B (low price, high quality, conventional)
Shampoo	A bottle of shampoo that is $7.99, is of average quality, and is not tested on animals	A bottle of shampoo that is $1.99, is of high quality, and is tested on animals
Sofa	A sofa that is $795, is of average quality, and is made by a company paying its workers above the industry average	A sofa that is $249, is of high quality, and is made by a company paying its workers below the industry average
Gold watch	A gold watch that is $320, is of average quality, and is made from fair-mined gold	A gold watch that is $150, is of luxury quality, and is not made from fair-mined gold
Shoes	A pair of shoes that is $120, is of average quality, and is made by a company that encourages employees to volunteer on company time	A pair of shoes that is $49, is of high quality, and is made by a company that has no policy on employees volunteering on company time
Potato chips	A bag of potato chips that is $5.49, is of average quality, and made by a company that provides food to community shelters	A bag of potato chips that is $3.29, is of premium quality, and made by a company that doesn't provide food to community shelters

jeans, coffee table). Within each experiment, participants were presented with the 2 (price) × 2 (quality) × 2 (sustainability) full-factorial design in random order and responded with a likelihood-of-purchase rating for each of the eight profiles. From these responses, we estimated results with ordinary least squares regressions for each participant.

$$L_j = \beta_0 + \beta_1 P + \beta_2 Q + \beta_3 S. \quad (1)$$

The β-coefficients from the regressions are the conjoint model partworth utilities (Green and Srinivasan 1990; Rao and Sattler 2000). Reliability of the responses for each participant was tested by correlating the stated preferences for the eight scenarios with the derived preferences from the conjoint model. Seventy-five unusable responses (those with equal values across all profiles) and unreliable responses (those with non-significant correlations at $p > 0.05$) were removed from further analyses, yielding 247, 282, 273, and

273 reliable responses in the coffee, cereal, blue jeans, and coffee table categories respectively.

Results

To test for differences in utility (β_1 = Price, β_2 = Quality, β_3 = Sustainability) between ESI segments (H_1–H_3), we ran a series of ANOVAs on the partworths and conducted planned comparisons between Entitleds and Benevolents. Table 3 shows both the overall mean partworths and the mean partworths by ESI segment for the each of the four product categories.

Hypothesis 1, proposing Entitleds have higher utility for price (β_1) than Benevolents, was supported in three of four product categories. One of the two lower-involvement products failed to provide support for H_1. In the coffee condition, the ANOVA of β_1 was non-significant [$F_{(2, 244)} = 1.09$, $p > 0.05$], failing to support H_1. However, in the cereal condition, the ANOVA of β_1 was significant [$F_{(2, 279)} = 6.09$, $p < 0.05$] and planned comparisons between Benevolents ($\beta_1 = -3.70$) and Entitleds ($\beta_1 = -4.62$) were significant ($p < 0.05$), supporting H_1. Both higher-involvement products supported H_1. In the blue jeans condition, the ANOVA of β_1 was significant [$F_{(2, 270)} = 3.68$, $p < 0.05$] and comparisons between Benevolents ($\beta_1 = -3.10$) and Entitleds ($\beta_1 = -4.30$) were significant ($p < 0.05$), supporting H_1. In the coffee table condition, the ANOVA of β_1 was significant [$F_{(2, 263)} = 3.28$, $p < 0.05$] and comparisons between Benevolents ($\beta_1 = -0.95$) and Entitleds ($\beta_1 = -1.63$) were significant ($p < 0.05$), supporting H_1.

Hypothesis 2, proposing Entitleds have higher utility for perceived quality (β_2) than Benevolents, was not supported in any product category, regardless of product involvement. The ANOVAs of β_2 in the coffee condition [$F_{(2, 244)} = 2.89$, $p > 0.05$], the cereal condition [$F_{(2, 279)} = 1.56$, $p > 0.05$], the blue jeans condition [$F_{(2, 270)} = 1.22$, $p > 0.05$], and the coffee table condition [$F_{(2, 263)} = 0.56$, $p > 0.05$], were all non-significant, failing to support H_2.

Hypothesis 3, proposing Entitleds have lower utility for sustainability (β_3) than Benevolents, was supported across all four product categories, regardless of product involvement. In the coffee condition, the ANOVA of β_3 was significant [$F_{(2, 244)} = 11.20$, $p < 0.001$] and the planned comparisons between Benevolents ($\beta_3 = 2.71$) and Entitleds ($\beta_3 = 0.88$) were significant ($p < 0.01$). In the cereal condition, the ANOVA of β_3 was significant [$F_{(2, 279)} = 15.44$, $p < 0.01$] and comparisons between Benevolents ($\beta_3 = 2.32$) and Entitleds ($\beta_3 = 0.72$) were significant ($p < 0.01$). In the blue jeans condition, the ANOVA of β_3 was significant [$F_{(2, 270)} = 18.26$, $p < 0.01$] and comparisons between Benevolents ($\beta_3 = 3.72$) and Entitleds ($\beta_3 = 1.15$) were significant

Table 3 Comparison of attribute partworths for the conjoint scenarios by ESI segment

	Total	BEN	EQS	ENT	*F*-value	*p*-value	Bonferroni comparisons
Coffee	$n = 247$	$n = 49$	$n = 146$	$n = 52$	df = (2, 244)		
Intercept	5.47	4.90	5.46	6.03	3.62	0.028*	(1, 3)*
β_1 (Price)	−2.21	−2.03	−2.14	−2.55	1.09	0.337	**–**
β_2 (Quality)	0.83	0.51	0.94	0.85	2.89	0.057	–
β_3 (Sustainability)	1.85	2.71	1.91	0.88	11.20	0.000**	(1, 2)*, (2, 3)*, **(1, 3)****
Blue jeans	$n = 273$	$n = 42$	$n = 177$	$n = 54$	df = (2, 270)		
Intercept	4.79	3.82	4.63	6.08	13.32	0.000**	(2, 3)**, (1, 3)**
β_1 (Price)	−3.60	−3.10	−3.51	−4.30	3.68	0.026*	**(1, 3)***
β_2 (Quality)	0.80	1.01	0.81	0.62	1.22	0.297	–
β_3 (Sustainability)	2.67	3.72	2.89	1.15	18.26	0.000**	(2, 3)**, **(1, 3)****
Coffee table	$n = 266$	$n = 55$	$n = 149$	$n = 62$	df = (2, 263)		
Intercept	4.32	3.87	4.22	4.96	4.21	0.016*	(1, 3)*
β_1 (Price)	−1.30	−.95	−1.29	−1.63	3.28	0.039*	**(1, 3)***
β_2 (Quality)	1.17	1.05	1.16	1.29	0.56	0.571	–
β_3 (Sustainability)	2.69	3.35	2.98	1.42	14.99	0.000**	(2, 3)**, **(1, 3)****
Cereal	$n = 282$	$n = 50$	$n = 173$	$n = 59$	df = (2, 279)		
Intercept	6.54	5.82	6.55	7.12	6.64	0.002*	(1, 2)*, (1, 3)*
β_1 (Price)	−3.75	−3.70	−3.46	−4.62	6.09	0.003*	(1, 2)*, **(1, 3)**
β_2 (Quality)	0.81	1.03	0.73	0.85	1.56	0.212	–
β_3 (Sustainability)	1.52	2.32	1.55	0.72	15.44	.000**	(1, 2)*, (2, 3)*, **(1, 3)****

1 = Benevolents (BEN), 2 = Equity Sensitives (EQS), 3 = Entitleds. Results of hypothesized comparisons in bold

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

($p < 0.01$). In the coffee table condition, the ANOVA of β_3 was significant [$F_{(2, 263)} = 14.99$, $p = 0.01$] and comparisons between Benevolents ($\beta_3 = 3.35$) and Entitleds ($\beta_3 = 1.42$) were significant ($p < 0.01$).

Hypothesis 4 was estimated with an ANOVA and planned contrasts testing for differences in the derived purchase likelihood of low price × high quality × conventional choice among ESI segments. Hypotheses 5 was examined with an ANOVA and planned contrasts testing for differences in the derived purchase likelihood of high price × low quality × sustainable choice among ESI segments. Table 4 shows the results of the overall derived purchase likelihoods and planned comparisons across the four conjoint studies.

Hypothesis 4, which proposed Entitleds are more likely than Benevolents to choose a conventional product when price is low and quality is high, was supported across all four product categories, regardless of product involvement. In the coffee condition, the ANOVA of the likelihood was significant [$F_{(2, 244)} = 6.18$, $p < 0.05$] and planned comparisons between Benevolents (Likelihood = 5.41) and Entitleds (Likelihood = 6.88) were significant ($p < 0.05$). In the cereal condition, the ANOVA of the likelihood was significant [$F_{(2, 279)} = 5.47$, $p < 0.05$] and comparisons between Benevolents (Likelihood = 6.85) and Entitleds (Likelihood = 7.97) were significant ($p < 0.05$). In the blue jeans condition, the ANOVA of the likelihood was significant [$F_{(2, 270)} = 9.05$, $p < 0.01$] and comparisons between Benevolents (Likelihood = 4.82) and Entitleds (Likelihood = 6.70) were significant ($p < 0.01$). In the coffee table condition, the ANOVA of the likelihood was significant [$F_{(2, 263)} = 5.32$, $p < 0.05$] and comparisons between Benevolents (Likelihood = 4.91) and Entitleds (Likelihood = 6.26) were significant ($p < 0.05$).

Hypothesis 5, proposing Entitleds are less likely than Benevolents to choose a sustainable product when price is high or quality is low, was supported across all four product categories, regardless of product involvement. In the coffee condition, the ANOVA of the likelihood was significant [$F_{(2, 244)} = 4.06$, $p < 0.05$] and comparisons between Benevolents (Likelihood = 5.59) and Entitleds (Likelihood = 4.36) were significant ($p < 0.05$). In the cereal condition, the ANOVA of the likelihood was significant [$F_{(2, 279)} = 10.09$, $p < 0.001$] and comparisons between Benevolents (Likelihood = 4.44) and Entitleds (Likelihood = 3.21) were significant ($p < 0.05$). In the blue jeans condition, the ANOVA of the likelihood was significant [$F_{(2, 270)} = 5.96$, $p < 0.05$] and comparisons between Benevolents (Likelihood = 4.43) and Entitleds (Likelihood = 2.94) were significant ($p < 0.05$). In the coffee table condition, the ANOVA of the likelihood was significant [$F_{(2, 263)} = 9.94$, $p < 0.001$] and comparisons between Benevolents (Likelihood = 6.27) and Entitleds (Likelihood = 4.75) were significant ($p < 0.001$).

Generalization of Results

To examine the predictive validity of the segments on combined product attributes, we modeled consumers' discrete choices. For this analysis, we used a binary logit model where product choice (high price × low quality × sustainable versus low price × high quality × conventional) was the dependent variable, and the conjoint partworths and control variables (age, gender, education, income, product experience, product familiarity, and social desirability) were predictors. A second logit model was analyzed by incorporating dummy variables for members of the Benevolent

Table 4 Overall derived purchase likelihoods by total sample and equity sensitivity segment

	Purchase likelihood	Total sample	BEN	EQS	ENT	*F*-value (2, 1065)	*p*-value	Bonferroni comparisons
High price, low quality, sustainable	$\beta_0+\beta_1+\beta_3$	4.73	5.24	4.89	3.83	23.86	0.000	(2, 3)**, **(1, 3)****
Low price, high quality, sustainable	$\beta_0+\beta_2+\beta_3$	8.38	8.52	8.47	8.00	6.70	0.001	(2, 3)*, (1, 3)*
Low price, low quality, sustainable	$\beta_0+\beta_3$	7.47	7.62	7.57	7.08	6.89	0.001	(2, 3)*, (1, 3)*
High price, high quality, sustainable	$\beta_0+\beta_1+\beta_2+\beta_3$	5.63	6.14	5.79	4.75	20.15	0.000	(2, 3)**, (1, 3)**
High price, low quality, conventional	$\beta_0+\beta_1$	2.55	2.23	2.56	2.78	3.88	0.021	(1, 3)*
Low price, high quality, conventional	$\beta_0+\beta_2$	6.19	5.51	6.14	6.95	21.62	0.000	(1, 2)*, (2, 3)**, **(1, 3)****
Low price, low quality, conventional	β_0	5.29	4.61	5.24	6.04	21.42	0.000	(1, 2)*, (2, 3)**, (1, 3)**
High price, high quality, conventional	$\beta_0+\beta_1+\beta_2$	3.45	3.13	3.46	3.70	3.30	0.037	(1, 3)*

1 = Benevolents (BEN), 2 = Equity Sensitives (EQS), 3 = Entitleds (ENT). Results of hypothesized comparisons in bold

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

and Entitled segments into the original equation. This was done to determine the total predictive effect of the segments on discrete choice, given the between-condition partworths derived from the conjoint studies.

Results of the predictive model are reported in Table 5. Across five product categories, the initial logit models were significant. After adding ESI segmentation to the models, pseudo-R^2 significantly improved across each model, validating the predictive validity of segmenting by self-other orientation. For shampoo choice, adding ESI segments improved from model 1 [$\chi^2_{(10)} = 232.89$, Pseudo-$R^2 = 0.259$] to model 2 [$\chi^2_{(12)} = 239.19$, Pseudo-$R^2 = 0.265$; Δ pseudo-$R^2 = 2.3\%$]. The change in shampoo model fit was significant [$\Delta\chi^2_{(2)} = 6.30$, $p < 0.05$]. For sofa choice, adding ESI segments improved from model 1 [$\chi^2_{(10)} = 202.49$, Pseudo-$R^2 = 0.276$] to model 2 [$\chi^2_{(12)} = 220.52$, Pseudo-$R^2 = 0.298$; Δ pseudo-$R^2 = 8.0\%$]. The change in sofa model fit was significant [$\Delta\chi^2_{(2)} = 18.03$, $p < 0.05$]. For gold watch choice, adding ESI segments improved from model 1 [$\chi^2_{(10)} = 166.34$, Pseudo-$R^2 = 0.201$] to model 2 [$\chi^2_{(12)} = 181.39$, Pseudo-$R^2 = 0.217$; Δ Pseudo-$R^2 = 8.0\%$]. The change in gold watch model fit was significant [$\Delta\chi^2_{(2)} = 15.05$, $p < 0.05$]. For shoe choice, adding ESI segments improved from model 1 [$\chi^2_{(10)} = 63.21$, Pseudo-$R^2 = 0.174$] to model 2 [$\chi^2_{(12)} = 72.81$, Pseudo-$R^2 = 0.200$; Δ Pseudo-$R^2 = 14.9\%$). The change in shoe model fit was significant [$\Delta\chi^2_{(2)} = 9.60$, $p < 0.05$]. For potato chip choice, adding ESI segments improved from model 1 [$\chi^2_{(10)} = 147.50$, Pseudo-$R^2 = 0.188$] to model 2 [$\chi^2_{(12)} = 176.23$, Pseudo-$R^2 = 0.222$; Δ Pseudo-$R^2 = 18.1\%$]. The change in potato chip model fit was significant [$\Delta\chi^2_{(2)} = 28.73$, $p < 0.05$]. Across the five products, the mean change in pseudo-R^2 was 10.3%.

Market Share Simulation (Hypotheses 4 and 5 Robustness Check)

Finally, to demonstrate the managerial and policy implications of the ESI, we ran a market share simulation to further explore choice responses across the various combinations of attributes. The simulation determined which choice structures the ESI segments were most likely to choose for each of the eight combinations of price, quality, and sustainability. Each observation's derived utility was calculated for different product attribute combinations. A choice was recorded for the product attribute combination with the highest derived utility. If there was a tie among product attributes, each received a count value of 0.5. Market shares were then estimated from the raw choice counts for the overall market and within ESI segments. Market share percentages were then contrasted by ESI segments. The full results of the choice likelihood market share simulation are displayed in Table 6.

Across all segments, product categories, and product involvement levels, market response to the low price × high quality × sustainable combination was most positive overall, followed by response to the combination of low price × low quality × sustainable attributes. This was a reasonable outcome, given the combined individual and societal benefits of this choice structure. Market response was least positive overall to the high price × low quality × conventional combination and the high price × high quality × conventional combination. Again, this was reasonable, given the absence of both individual and societal benefits of these choice structures.

The simulated market shares provide more robust supporting evidence for H_4 and H_5. Between the segments, when a conventional product is low price and high quality, Entitleds are more likely than Benevolents to choose, adding support to H_4; this suggests Entitleds might be less concerned with a product's sustainability in the absence of that attribute (Ehrich and Irwin 2005). When a sustainable product is high price and high quality, Benevolents are more likely than Entitleds to choose, adding support to H_5; this suggests Benevolents might be less concerned with a product's price in the presence of that attribute (validating prior studies assessing customers' willingness-to-pay more for sustainable products, e.g., De Pelsmacker et al. 2005; Luchs et al. 2010). Finally, when a sustainable product is high price and low quality, Benevolents are no more or less likely than Entitleds to choose; this suggests that Benevolents would likely seek an alternate product or fail to choose.

Study 2: Availability of Sustainable Product Options on Equity Sensitives' Willingness-to-Purchase

In study 2, we examine H_6 and address two issues not addressed in study 1. First, given we find in study 1 that a majority of consumers are Equity Sensitives, we examine how balanced self-other orientation affects sustainability consumption decisions. Second, given consumers are not always presented with options of both conventional and sustainable versions of a product, we also investigate how contextual factors, such as having only a single available product option (either conventional or sustainable), affect Equity Sensitives' willingness-to-purchase.

Method

We conducted an experiment that assessed Equity Sensitives' responses to choosing a sportswatch—a product where sustainable options are available in the marketplace (e.g., Citizen Eco-Drive), though not commonly associated with the category. Data ($n = 247$) were collected from an

Table 5 Logistic regression of discrete choice tasks

	Shampoo		Sofa		Gold watch		Shoes		Potato chips	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Intercept	−0.519	−0.094	−4.968**	−4.265**	−2.410**	−1.840*	−3.996*	−3.407*	−2.443**	−1.645*
β_1 (Price)	0.128**	0.127**	0.203**	0.199**	0.169**	0.168**	0.255*	0.249*	0.129*	0.129*
β_2 (Quality)	−0.094	−0.097	−0.143	−0.142	−0.106	−0.106	−0.303*	−0.305*	−0.163*	−0.173*-
β_3 (Sustainability)	0.254**	0.235**	0.290**	0.261**	0.286**	0.262**	0.247**	0.218*	0.285**	0.256**
Age	0.000	−0.001	0.015*	0.013	0.003	0.002	−0.008	−0.011	−0.011	−0.015*
Gender (1 = male)	−1.348**	−1.345**	−0.840**	−0.804**	−0.329*	−0.317**	−0.373	−0.282	−0.341*	−0.304
Education (1 = post-secondary)	0.021	0.021	−0.124	−0.138	0.152	0.144	−0.247	−0.275	−0.427*	−0.463*
Income (1 = $30,000 or more)	0.042	0.050	0.307	0.315	−0.037	−0.025	0.140	0.182	0.057	0.077
Product experience (1 = yes)	0.549	0.472	−0.564	−0.547	0.396	0.394	0.703	0.808	0.250	0.327
Product familiarity (1 = yes)	−0.334	−2.43	0.604	0.642	−0.399	−0.364	−1.373*	−1.451*	−0.265	−0.310
Social desirability	0.008	0.002	0.060**	0.050*	0.026*	0.019	0.034	0.021	0.035*	0.022
ESI (1 = ENT)		−0.386*		−1.317*		−0.851**		−0.461		−0.741*
ESI (1 = BEN)		0.199		0.195		−0.037		0.901*		0.724**
Model fit	232.89	239.19	202.49	220.52	166.34	181.39	63.21	72.81	147.50	176.23
df	10	12	10	12	10	12	10	12	10	12
Pseudo-R^2	0.259	0.265	0.276	0.298	0.201	0.217	0.174	0.200	0.188	0.222
Predicted % correct	70.9	71.4	83.0	83.0	74.4	74.1	95.2	95.1	77.7	77.6

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

Table 6 Simulation of sustainable consumption market shares (percentages)

	Coffee			Jeans			Table			Cereal		
Price/quality/sustainable	BEN	EQS	ENT	BEN	EQS	ENT	BEN	EQS	ENT	BEN	EQS	ENT
High/low/present	1.8	0.6	4.2	3.3	1.9	0.0	7.9	3.7	0.7	1.9	0.8	0.0
Low/high/present	49.1	65.5	55.1	72.2	69.0	59.5	53.2	64.6	52.2	76.9	66.5	58.1
Low/low/present	24.1	13.1	12.7	13.3	16.8	12.1	14.3	10.7	15.4	14.4	18.4	11.3
High/high/present	9.8	5.1	0.8	7.8	3.8	2.6	15.1	12.5	10.3	3.8	1.4	0.0
High/low/conventional	0.0	0.9	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.6	0.0
Low/high/conventional	8.9	8.6	20.3	3.3	5.7	16.4	4.0	5.2	16.9	2.9	8.4	25.0
Low/low/conventional	4.5	4.5	5.1	0.0	1.4	8.6	5.6	2.1	2.9	0.0	3.4	5.6
High/high/conventional	1.8	1.8	1.7	0.0	0.0	0.9	0.0	1.2	1.5	0.0	0.6	0.0

Likelihoods with ties were split between "likely" shares and "unlikely" shares

introductory marketing class in exchange for course credit. The sample was 59.5% male (M_{age} = 20.1 years), with 52.2% of the sample having between $0 and 50 per week on discretionary income and 46.6% of the sample identifying as coming from a middle-class family.

As in the main study, participants were given the ESI for segmentation and randomly assigned to view only one of two product conditions with orthogonal attributes (low price × high quality × conventional versus high price × low quality × sustainable). In each condition, a description of the sportswatch was presented along with 5-item measures of both perceived product quality (α = 0.86; Dodds et al. 1991) and willingness-to-purchase (α = 0.89; Dodds et al. 1991) (see "Appendix 2" for product descriptions).

Results

Following the procedure in the study 1 above and in Ross and Kapitan (2018), a *K*-means cluster was used to segment the sample according to the three ESI segments (see "Appendix 1"). From the sample, 157 participants (63.6%) were categorized as Equity Sensitives, 42 participants categorized as Benevolents (17.0%), and 48 participants (19.4%) were categorized as Entitleds.

A 2 (product configuration) × 3 (segment) ANCOVA measured differences for willingness-to-purchase with social desirability included as a covariate [ANCOVA ($F_{(6,240)}$ = 8.65, p = 0.000)], however social desirability was not significant [$F_{(1, 240)}$ = 3.72, p = 0.06] and was subsequently omitted from analysis. The ANOVA measuring differences for willingness to purchase was significant [$F_{(5, 241)}$ = 9.53, p = 0.000] with a significant product configuration × segment interaction). The means between Equity Sensitives (M = 3.44, SD = 1.21), Benevolents (M = 3.57, SD = 1.32), and Entitleds (M = 3.80, SD = 1.01) in willingness-to-purchase the low price × high quality × conventional product [$F_{(2, 121)}$ = 0.95, p > 0.05] did not differ. Additionally, there were no significant differences between Equity Sensitives (M = 4.70, SD = 1.30), Benevolents (M = 4.36, SD = 1.19), and Entitleds (M = 4.58, SD = 1.68) in the willingness-to-purchase the high price × low quality × sustainable product [$F_{(2, 120)}$ = 0.60, p > 0.05]. In examining Bonferroni comparisons, there were no significant differences in willingness-to-purchase the high price × low quality × sustainable product versus low price × high quality × conventional product for either the Entitled (p = 0.541) or the Benevolent (p = 0.705) segments. However, Equity Sensitives were significantly more willing to purchase the high price × low quality × sustainable product than the low price × high quality × conventional product (p = 0.000) supporting H_{6a} and failing to support H_{6b}.

Discussion

This research makes two primary contributions to the sustainable consumption literature. First, we demonstrate that segmenting consumers by their self-other orientation helps predict preference structures in multiattribute sustainable choice. Prior consumer segmentation schemes have assessed consumer choice using rational attitudes and values for narrow sustainability issues (Balderjahn et al. 2018; Haws et al. 2014; Iyer and Banerjee 1993; Ozanne and Smith 1998); our use of equity sensitivity (Ross and Kapitan 2018) to segment consumers' self-other orientation consistently predicts attribute utility and choice preference for a broad assortment of products and sustainability issues. In study 1, we highlight differences in self-other tradeoffs by segmenting consumers according to self-other orientation and contrasting attribute utility and choice preferences of the extreme segments (Entitleds, Benevolents). Entitled consumers derive more utility than Benevolents from price attributes, but less utility than Benevolents from sustainability attributes. Further, the combination of the attribute tradeoffs demonstrates Entitleds as consistently more likely than Benevolents to purchase conventional products that are low price/high quality, and

less likely than Benevolent to purchase sustainable products that are high price/low quality.

Second, we demonstrate that, while a significant proportion of the consumer population balances self-other orientation, it is significantly predisposed to make sustainable purchase decisions. A test of the balanced tradeoff in study 2 finds Equity Sensitives are more willing to purchase a sustainable product over a conventional product—even under high price/low quality conditions. This result suggests that, as firms create innovative sustainable product lines, there is significant opportunity for marketers to market these product lines to Equity Sensitives. Given that two studies demonstrate Equity Sensitives consistently comprise nearly two-thirds of the consumer market, the result indicates substantial strategic potential. A firm's long-term sustainability strategy may supplant a conventional version of a product with a sustainable version—while still retaining both Benevolents and Equity Sensitives as customers.

Conclusions

The results show that marketers who incorporate self-other segmentation schemes will benefit from such consumer-centric efforts to reach sustainable consumers, supporting the approach advocated by Sheth et al. (2011). We find that segmenting consumers by their disposition toward self-other tradeoffs (i.e., their self-other orientation) helps predict price–quality–sustainability tradeoffs across a broad array of product assortments and sustainability issues. We find that price provides high utility for Entitled consumers, while sustainability provides high utility for Benevolent consumers. When product attributes are combined, Benevolents are more likely than Entitleds to purchase sustainable products. A market share simulation serves as a robustness check to validate these findings. We also find that Equity Sensitives more willing to purchase a sustainable option when considering a single available product option, even when prices are high. A summary of the hypotheses and their outcomes is in Table 7. Theoretical contributions and managerial implications are elaborated on next.

Theoretical Contribution

White et al. (2019) call for research on the impact of self-other tradeoffs on consumers' sustainable consumption behaviors. In this paper, we address their call, drawing on prior research that segments consumers by their self-other orientation (Ross and Kapitan 2018) and applying it to multiattribute product choice. While understanding how consumers make sustainable consumption tradeoffs using rational utility (Olson 2013; Simpson and Radford 2014) and values (Balderjahn et al. 2018; Haws et al. 2014) is important to sustainable consumption research, consumers are not entirely rational. The findings concur with the suggestion by White et al. (2019) that there is additional benefit to broadening the scope of sustainable consumption research to account for self-other orientation. Such an approach differs from prior segmentation approaches that use consumer values (Balderjahn et al. 2018; Haws et al. 2014) or attitudes toward sustainability (Iyer and Banerjee 1993; Minton and Rose 1997) in shaping sustainable choice contexts. In particular, attitudes and values approaches often fail to homogeneously predict choice over a heterogeneous range of sustainability contexts (Carrington et al. 2010; Devinney et al. 2010), whereas segmenting by self-other orientation yields consistent preferences across product categories and sustainability issues.

In this research, we demonstrate how consumers' self-other orientation significantly affects multiattribute choice. As hypothesized, we find empirical evidence that the price attribute provides greater utility to the self-oriented Entitled segment, while the sustainability attribute provides greater utility to the other-oriented Benevolent segment. Notably, there was no difference in utility between Benevolents and Entitleds for the product quality attribute. In the context of multiattribute choice preference structures, Entitleds are consistently more willing to choose conventional products, whereas Benevolents are consistently more willing to choose sustainable products. By validating the results of the conjoint studies with discrete choice tasks, we find the predictions hold over various product categories, levels of involvement, and sustainability issues; equity sensitivity

Table 7 Summary of hypotheses

H_1: Entitled consumers will have higher utility for price than Benevolent consumers	Supported
H_2: Entitled consumers will have higher utility for quality than Benevolent consumers	Not supported
H_3: Entitled consumers will have lower utility for sustainability than Benevolent consumers	Supported
H_4: Entitleds are more likely than Benevolents to make a conventional product choice	Supported
H_5: Entitleds are less likely than Benevolents to make a sustainable product choice	Supported
H_{6a}: When considering a single available product option, Equity Sensitives are more willing to purchase a high price, low quality, and sustainable product than to purchase a low price, high quality, and conventional product	Supported
H_{6b}: When considering a single available product option, Equity Sensitives are less willing to purchase a high price, low quality, and sustainable product than to purchase a low price, high quality, and conventional product	Not supported

segmentation moderates sustainable choice tradeoffs. Additional market share analyses cross-validate the results of the conjoint studies.

Further, we find that consumers who are predisposed to balancing self-other tradeoffs do so in their product choice. An additional study demonstrated when considering a single available product option, more Equity Sensitives are willing to purchase a sustainable option than a conventional option, even when the price is high. As Equity Sensitives—the segment of consumers who are oriented toward balancing self-other tradeoffs equally in their mental "portfolio" of marketplace behaviors—represent a significant proportion of the consumer market, this is a significant finding. For consumers in the middle, altering the choice architecture itself may positively impact the purchase likelihood of sustainable products.

Managerial Implications

Many firms place sustainability as part of their corporate mission—particularly in efforts to appeal to a certain "type" of sustainable consumer. Firms integrating sustainability strategies need robust consumer-based strategy congruent with a solid understanding of their prospective customer base (Hamilton 2016; Sen and Bhattacharya 2001; Sheth et al. 2011). For example, the voluntary nature of a firm registering as a Certified B Corporation (e.g., Patagonia, Seventh Generation) may hold greater appeal to Benevolents. In contrast, firms that downplay the sustainability of their products (e.g., Tesla, Impossible Foods), while highlighting the conspicuous nature of such consumption (Griskevicius et al. 2010) may hold greater appeal to the self-orientation of Entitleds. This paper argues that discretely segmenting consumers by their self-other orientation determines the extent to which their price–quality–sustainability tradeoffs are congruent with firms' sustainability strategies.

However, appealing to a certain type of sustainable consumer may be less important for encouraging sustainable consumer behaviors than understanding consumers' broad dispositions toward self-other tradeoffs. If firms are trying to achieve returns on their CSR investments, how they approach consumers' self-other orientation may significantly affect consumers' product choices. As firms differentiate both their sustainability offerings and brand positioning, aligning these strategies with equity sensitivity segments allows firms to both deepen their relationships with current customers or broaden their relationships to potential customers. This consumer-centric approach to sustainability is advocated by Sheth et al. (2011). The results of the market share simulation demonstrate consumers consistently express the highest choice likelihood for the low price × high quality × sustainable product, however this combination of attributes is not always feasible for firms to offer. While Benevolents tend to consistently choose sustainable products regardless of complementary attributes, getting Entitleds to do so may require significantly more effort. Adding new product attributes that appeal to Entitleds' self-orientation may yield increased sustainable tradeoff choices. These efforts may include either providing more low-cost sustainable products in the market, promoting self-benefits of these products, or limiting attention to the societal-benefit of a product's sustainability attributes.

Limitations and Future Research

The following limitations should be considered when interpreting the findings. First, both samples (study 1 and 2) were limited to U.S. geography. Given the balance of self-other orientation as measured by the ESI, it is possible countries where people tend to have collectivist orientations may see segment proportions that vary from those consistently found throughout our research. Second, although we tested multiattribute product tradeoffs, we constrained the research to a limited set of product attribute combinations: price, quality, and sustainability. Price and quality are two of the most common product attributes researched in marketing literature (Grewal et al. 1998; Monroe and Dodds 1988) and we argue it is within reason to limit the scope of the research to these attributes in the context of multiattribute tradeoffs. Third, although segmenting ESI scores by cluster analysis is a practical way to group participants according to sample-specific characteristics (see "Appendix 1"), it is limited in its capability to determine individual-level segmentation using raw ESI scores. This presents a practical issue for marketers looking to microtarget consumers using the ESI in addition to other segmentation variables. From a methodological standpoint, the proportions of equity sensitivity segments found in the multiple U.S. population-based experiments generalize to approximately two-thirds of participants clustered as Equity Sensitives. In a random population sample, this necessitates larger-than-common sample sizes to reach minimum cell sizes necessary to evaluate both the Entitled and Benevolent clusters.

Future research could be undertaken to address these limitations. First, research should examine the ESI in different countries and cultures. Cross-cultural surveys of consumers may find the implications of this U.S.-based research fail to generalize to consumer markets in other countries. For example, markets in high-collectivist cultures may yield a higher proportion of Benevolents, whose increased societal-orientation is predisposed toward sustainable consumption. In contrast, markets in high-individualist cultures may yield a higher proportion of Entitleds, requiring strategies with greater appeal to self-orientation in product choice. Research that validates the ESI using cross-cultural segmentation is warranted, particularly for global marketing contexts.

Second, future research can extend the findings to determine how equity sensitivity segmentation aligns with the utility of other product attributes such as brand reputation, design aesthetic, packaging, use characteristics, or perceived innovativeness. In particular, examining how Equity Sensitives and Entitleds trade-off sustainability relative to these attributes may shed light on developing more consumer-centric marketing strategies (Hamilton 2016). Research on contexts that moderate the self-other utilities of such attributes, relative to the equity sensitivity segments, may positively affect the outcomes of sustainability strategies.

Third, more research is necessary to establish benchmark threshold scores for ESI segments, so scholars and practitioners can assign individual consumers to segments directly from raw scores. Large scale research that finds consistent equity sensitivity instrument thresholds for each segment would enable firms to use the instrument in market research surveys and better understand their customers. Since the ESI measures self-other tradeoffs using a five-question scale, it would be easy for marketers to collect these data online or through frequent shopper sign-ups. Obtaining these data would be valuable to firms creating targeted marketing communications that communicate sustainable attributes and highlight the appropriate self-other tradeoff to the appropriate equity sensitivity segment.

Compliance with Ethical Standards

Conflicts of interest The authors declare that they have no conflict of interest.

Research Involving Human Participants: All procedures performed in studies involving human participants were in accordance with the Ethical Standards of the University of Massachusetts Amherst Isenberg School of Management Institutional Review Board and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

Informed Consent: Informed consent was obtained from all individual participants included in the study.

Appendix 1: *K*-Means Cluster Analysis Details

We reference Ross and Kapitan (2018) for the rationale for using segmentation procedure, which validated the use of *K*-means resulting in a 3-cluster solution. Use of *K*-means is useful when the number of clusters is known, which is the case of the application here. The *K*-means cluster analysis was used to assign individuals into one of three segments (Entitled, Equity Sensitive, and Benevolent) based on their score on the equity sensitivity index. Scores for the Equity Sensitive Index range from 0 to 50, where 0 is very entitled, and 50 is very benevolent.

There are known limitations of *K*-means cluster analysis including being sensitive to scaling issues across variables, outliers, and initial seed selection. However, in our analysis, these were not an issue. Our analysis segmented one variable (equity sensitivity index score), so no scaling issues were involved. The initial seeds for the clusters were set as the theoretical minimum (0), average (25), and maximum (50) levels. Additionally, since this variable is normally distributed in a bounded range, there were no outliers.

In both study 1 and study 2 we conducted the cluster analysis on the entire sample prior to individual-condition analysis. For both studies, initial seeds for the clusters were set at the theoretical minimum (0), average (25), and maximum (50). The *K*-means procedure achieved convergence in 5 iterations. For study 1, differences in the means ($M_{ENT} = 13.88$, $M_{EQS} = 25.19$, $M_{BEN} = 37.38$) were statistically different [$F_{(2,1140)} = 1863.46$, $p = 0.000$]. The threshold of scores on the equity sensitivity index were 0–19 as Entitled, 20–32 for Equity Sensitive, and 30–50 for Benevolent segments. For study 2, differences in the means [$M_{ENT} = 15.60$, $M_{EQS} = 26.29$, $M_{BEN} = 36.62$] were statistically different [$F_{(2,\ 244)} = 372.82$, $p = 0.000$]. The threshold of scores on the equity sensitivity index were 0–20 as Entitled, 21–31 for Equity Sensitive, and 32–50 for Benevolent segments.

Appendix 2: Sports watch Study Product Stimuli

Product Description [Low Price, High Quality, Conventional]

This Horlogio Analog Watch has a classically casual style, features a white dial face, which is embellished with standout Arabic numerals and minute indexes, and comes protected by a durable sapphire glass dial window. A black silicone band is equipped with a sturdy buckle clasp. Other details include a steel-toned, stationary bezel, 35-mm ceramic case, and waterproofing to 300 ft. Sleek and dependable, this handsome timepiece brings an easy functionality to your fast-paced lifestyle.

Price: $29.

About Horlogio

Horlogio entered the wristwatch market at a time when the watch industry had just discovered digital technology. As a company with cutting-edge technology, Horlogio entered this field confident that it could develop timepieces that would lead the market. Recently, Horlogio launched a series of smartwatches that sync to the user's cell phone to

automatically update the time. Horlogio: Always moving time forward.

Product Description [High Price, Low Quality, Sustainable]

This Horlogio Analog Ecowatch has a classically casual style, features a white dial face, which is embellished with stand-out Arabic numerals and minute indexes. A black plastic band is equipped with a buckle clasp. Other details include a black-toned, stationary bezel, 35-mm plastic case, and a solar cell battery. Sleek and sporty, this handsome timepiece brings an easy functionality to your fast-paced lifestyle.

Price: $149.

About Horlogio

Horlogio entered the wristwatch market at a time when the watch industry had just discovered digital technology. As a company with cutting-edge technology, Horlogio entered this field confident that it could develop timepieces that would lead the market. Recently, Horlogio launched its Ecowatch line, made from sustainably-sourced materials and working to improve living conditions in manufacturing communities around the world. Horlogio: Watching out for a better planet.

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