Case-based models of customer-perceived sustainable marketing and its effect on perceived customer equity☆

Yang Sun[a], Tony C. Garrett[b],*, Ian Phau[c], Bing Zheng[a]

[a] *School of Economics & Management, Zhejiang SCI-TECH University, China*
[b] *Korea University Business School, Korea University, Republic of Korea*
[c] *Curtin University, Australia*

ARTICLE INFO

ABSTRACT

This study presents case-based models that determine which sustainable marketing activities customer groups perceive to either enhance or reduce customer equity for a major sports clothing brand in China and South Korea. Complexity theory is used to identify different antecedents of customer equity that lead to the same outcomes. The study explores configurations of three dimensions of sustainable marketing that may affect customer equity. Young Chinese (n = 457) and Korean (n = 315) customers of a major sports clothing brand are surveyed to explore what configurations reduce or enhance the perception of customer equity and to test cultural differences. Academic and practical implications are also discussed.

1. Introduction

Sustainability is a key issue confronting many businesses, prompting marketing practitioners and scholars to investigate new and relevant objectives (Kotler, 2011). Methods for developing sustainable processes and products have become a central focus for marketing firms and overseeing agencies, such as the government. Although sustainable marketing stems from the concept of corporate social responsibility (CSR) and covers the same three dimensions (environmental, economic and social dimension), it focuses on the future of a firm's customers and the value of its partner relationships (Kotler, 2011; Roy, Verplanken, & Griffin, 2015). However, even though both customers and firms realize the importance of sustainability, customers may not pay attention to firms' investment in sustainable marketing strategies. Although there have been numerous managerial studies on sustainable marketing and CSR (e.g. Charlo, Moya, & Muñoz, 2015; Ferdous, 2010; Mariadoss, Tansuhaj, & Mouri, 2011; Yu & Choi, 2014), the majority of these have not addressed the fact that customers may know or care very little about a firm's sustainable marketing policies and marketing methods. There is thus a call for studies to explore what kinds of sustainable methods customers truly value and how firms can build and maintain customer equity (Kumar, 2018). Firms require such customer feedback because, without it, firms may not know how to effectively meet customer needs with effective sustainable marketing methods (Sun & Ko, 2016).

Therefore, although many firms have become aware of the importance of sustainability, many customers do not consider sustainability when making purchase decisions (Roy et al., 2015). Nevertheless, researchers have attempted to determine whether sustainable marketing can drive customer equity (e.g. Sun, Garrett, & Kim, 2016), but more research is needed to better understand the disconnect between customer attitudes and sustainability marketing efforts. The central purpose of this paper, therefore, is to ascertain how a firm's sustainable marketing activities influence customer equity from the perspective of their customers.

This study focuses on customer equity because it serves as a proxy for future customer behavior (Rust, Lemon, & Zeithaml, 2004). It has been argued that customer equity is a better predictor of customer trends in the mid to long term than measures such as purchase intention, which only focuses on customer behavior in the near future (Rust et al., 2004). Therefore, analyzing customer equity is better able to assist firms in determining how to retain current customers and attract potential new customers.

Although the general assumption is that sustainable marketing activities will drive customer equity, this may not always be the case. Sustainable marketing activities have been found to have either no effect or, in some cases, a negative effect on customer equity (Kim & Ko, 2012; Rust et al., 2004; Sun & Ko, 2016). Additionally, it has been argued that previous empirical results on this topic are generally weak,

Sustainable Marketing Activities (SMA)   Customer Equity Driver (CED)

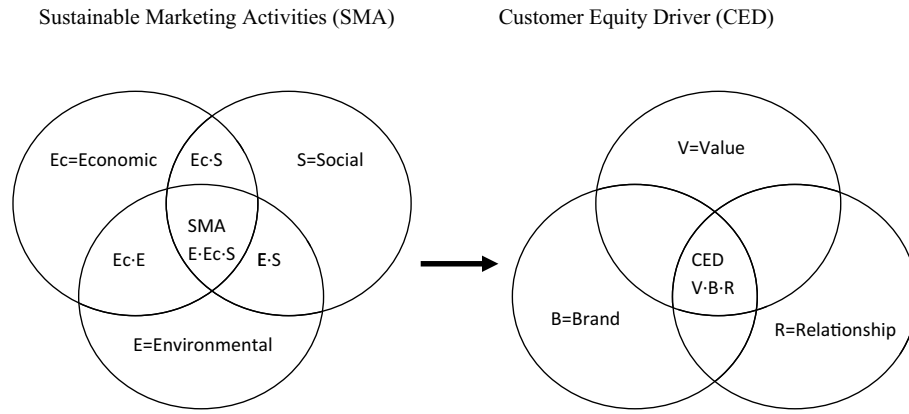**Fig. 1.** Configuration model of sustainable marketing and customer equity.

Table 1
Sample characteristics.

Category		China		Korea	
		Frequency	Percent	Frequency	Percent
Gender	Men	203	55.6	172	54.6
	Women	254	44.4	143	45.4
Age	< 20	54	11.8	52	16.5
	20–25	342	74.9	230	73
	26–30	60	13.1	30	9.5
	> 30	1	0.2	3	1
Education	Senior high school and below	16	3.5	230	73
	Junior college	51	11.2	10	3.2
	Bachelor's degree	381	83.4	69	21.9
	Master's or doctorate	9	2	6	1.9
Sports expenditures (USD)	Less than $50	138	30.2	13	4.1
	50–100	191	41.8	154	48.9
	100–200	100	21.9	135	42.9
	200–300	22	4.8	12	3.8
	> 300	6	1.3	1	0.3
Household income (Yearly/ USD)	< 50,000	186	40.7	123	39
	50,000–75,000	145	31.7	117	37.1
	75,000–100,000	101	22.1	42	13.3
	> 100,0000	25	5.5	33	10.5
Monthly sports expenditures	< 100	237	51.9	160	50.8
	100–300	135	29.5	120	38.1
	300–500	62	13.6	28	8.9
	500–1000	13	2.8	7	2.2
	> 1000	10	2.2	0	0

with variable hypotheses and conflicting results (Woodside, 2016), leading to potentially inaccurate conclusions. However, by focusing on the configuration of antecedents, complexity theory can overcome the shortcomings of symmetric variable hypotheses (McClelland, 1998; Woodside, 2015) and provide a more refined view of how sustainable marketing practices influence customer equity.

This study focuses on East Asian consumers, a group that has significantly increased their economic power both domestically and internationally. Consequently, researchers have sought to understand their values and motivations (Frank, Abulaiti, & Enkawa, 2012; Sun et al., 2016). This study specifically focuses on the Chinese and Korean customers of a major sports clothing brand. The paper uses fuzzy-set qualitative comparative analysis (fsQCA) to offer a new perspective on the configuration of sustainable marketing antecedents that drive customer lifetime value (CLV). In doing so, this study aims to verify the findings of previous studies and overcome the methodological shortcomings of previous sustainable marketing research. The present study thus addresses the gap between firms, customers, and sustainable concepts.

2. Literature review

2.1. Sustainable marketing

The concept of sustainable marketing is derived from CSR which focuses specifically on balancing and developing long-term environmental, economic, and social goals to attract customers and contribute to stakeholder needs (Sun, Kim, & Kim, 2014; Yilmaz & Flouris, 2010). As such, the sustainable marketing construct includes environmental, economic, and social dimensions (e.g. Kim, Taylor, Kim, & Lee, 2015; Shin & Thai, 2014; Song & Ko, 2017; Sun et al., 2014). These sustainable marketing dimensions are sourced from Elkington's (1994) triple bottom line accounting concept, which provides a balanced view on a firm's environmental and social efforts in relation to its economic performance.

The three dimensions of sustainable marketing have subsequently been further refined to reflect a firm's marketing efforts. The environmental dimension prescribes that firms establish an eco-friendly image, emphasize eco-friendly concepts in their advertising, and exhibit efforts to provide environmental protection (Kim et al., 2015; Löbler, 2017). The economic dimension requires firms to achieve short- and long-term economic goals, develop a competitive advantage, create value, enhance financial performance, and distribute profits fairly (Bansal, 2005). The social dimension encourages firms to enhance social and human wellbeing by improving employee welfare, sponsoring charities, and establishing good community and stakeholder relationships (Kim et al., 2015; Shin & Thai, 2014; Sun et al., 2016). The balance and potency of the three dimensions can potentially vary according to a firm's motives, market, and industry characteristics (Sun & Ko, 2016).

2.2. Customer equity drivers

Marketing research has focused a great deal of attention on the concept of customer lifetime value (CLV; Rust et al., 2004; Carr, Drennan, & Andrews, 2016) as a key to long-term success, although this does not necessarily indicate the entire value of a firm from a strategic marketing perspective (Kim & Ko, 2012). CLV is the "net present value of the stream of future profits expected over the customer's lifetime purchases", representing the total of the discounted lifetime value summed over the firm's current and potential customers (Rust et al., 2004) as a result of customer relationships that are maintained over a long time (Blattberg & Deighton, 1996; Tsao, 2013).

To create a competitive edge, firms must increase their customer equity. Although some researchers have attempted to explore alternative customer equity drivers (e.g., Lee et al., 2014), most researchers accept value equity, brand equity, and relationship equity to be the major drivers (Lemon, Rust, & Zeithaml, 2001; Liu, Ge, et al., 2014; Zhang, Ko, & Lee, 2013). Value equity is the measure of customers'

Table 2
Summary of Cronbach's α reliability test.

Variables	Items	Chinese sample	Korean sample
Environmental	Blend of environmental performance Environmental goals beyond economic only Marketing program, positive contribution Attention to sustainable activities Environmental factors in product design	0.78	0.77
Economic	Blend of financial performance Motivate customers, 3 dimensions harmony Environmental, social, advance profitability Environmental, social, growth sales Environmental, social, economy goes up Enlarge market share	0.83	0.82
Social	Redirects less environmental harmful Marketing tool to sustainable consumption Eco-friendly, necessary in future Social responsibility maintains profitable business Determine satisfy needs of customers Socially responsible, obey laws regulations No harmful materials	0.85	0.79
Value equity	Good quality Competitiveness prices Feel comfortable	0.71	0.69
Brand equity	Attention to brand advertising Attention to information Well known, corporate citizen Active sponsor community events High ethical standard respect Brand fit personality	0.82	0.79
Relationship equity	Brand loyalty membership program Treatment loyalty program Brand procedures well Know information about customer Recognize special Community with other people High trust in the brand	0.85	0.85

objective perceptions of gains or losses regarding quality, price, and convenience inherent to a brand (Lemon et al., 2001). Brand equity is established through images and meanings that attract new customers, maintain the customer base, raise customer awareness, and establish emotional ties that connect customers to the firm (Erdem et al., 1999; Lemon et al., 2001). Relationship equity reflects a firm's efforts to establish enduring customer relationships through loyalty, affinity, community-building, and knowledge-building programs (Ou, Verhoef, & Wiesel, 2016; Rust et al., 2004).

2.3. The complexity theory perspective

The complexity theory perspective assumes asymmetry, that is there are alternate paths that can lead to the same outcome, and that variables can be non-linear, meaning that a single antecedent may lead to different results (Wu, Yeh, Huan, & Woodside, 2014). Unlike symmetric tests, an asymmetric test relies on Boolean algebra to determine if complex antecedent conditions produce the same results (Woodside, 2015). Wu et al. (2014) summarized complexity theory using three propositions based on different antecedent conditions: (1) a single antecedent condition alone cannot be a sufficient indicator of a specific outcome; (2) a few complex configurations of antecedent conditions are sufficient to indicate a specific outcome; and (3) low scores for a single antecedent condition may lead to either high or low scores for the specific outcome in different cases. Causal models for a specific outcome are thus not mirror opposites of causal models for the absence of that outcome. Complexity theory has increasingly been adopted in service and behavioral research settings (Woodside, 2015).

2.4. Sustainable marketing and customer equity: case-based modeling

This paper argues that there are three sustainable marketing

antecedents of customer equity. Past research using structural equation modeling has shown that these three sustainable marketing dimensions have a positive effect on customer equity (Sun et al., 2014; Sun et al., 2016). For example sustainable or eco-friendly brands can improve a customer's favorable impression (Liu, Wong, et al., 2014); customers and stakeholders glue the company with economic development (Bansal, 2005); and a company establishes good human well-being to enhance the relationship with customers (Kim et al., 2015). The paper assumes therefore that all sustainable marketing activities will have an influence on customer equity and consumer purchase behavior (e.g. Lemon et al., 2001). Yilmaz and Flouris (2010) further argue that all three sustainable marketing activities should be used; any missing will not lead to sustainability. Whether all the sustainable marketing dimensions equally or have a positive impact in all environments however is also debated (e.g. Kim & Ko, 2012; Sun & Ko, 2016).

Only using symmetrical tests therefore may give limited insight into the phenomena under investigation (Woodside, 2016). Symmetric tests are primarily used to confirm or reject variables, but using individual variables, or adding more variables, usually cannot accurately predict outcomes (Woodside, 2015). In contrast, set-theoretic methods such as qualitative comparative analysis (QCA) can identify causes and conceptualize unique combinations of attributes (Ragin & Fiss, 2008; Woodside, Hsu, & Marshall, 2011). To overcome the limitations of symmetric analysis, complexity theory includes the causal asymmetry principle, Boolean algebra, and fuzzy set qualitative comparative analysis to identify Y levels (Woodside, 2015; Xie, Fang, & Zeng, 2016). A subset of QCA is fsQCA, a configurational approach that focuses on whether specific causal combinations (i.e., configurations) are associated with a target outcome or constitute a single condition (McNamara, 2015; Woodside, Schpektor, & Xia, 2013). It is thus possible that there may be no single best configuration of potential antecedents that can lead to high customer equity in this study, but there

Table 3a
Results from the contrarian case analysis (Chinese sample).

		Value, brand and relationship equity drivers					Total
		1	2	3	4	5	
Environmental (Phi = .73, p < 0.001)	1	*3* 0.7%	*2* 0.4%	0 0.0%	**1** 0.2%	**0** 0.0%	6 1.3%
	2	*12* 2.6%	*30* 6.6%	12 2.6%	**0** 0.0%	**3** 0.7%	57 12.5%
	3	5 1.1%	48 10.5%	53 11.6%	19 4.2%	3 0.7%	128 28.0%
	4	**2** 0.4%	**18** 3.9%	47 10.3%	*59* 12.9%	*23* 5.0%	149 32.6%
	5	**1** 0.2%	**6** 1.3%	16 3.5%	*42* 9.2%	*52* 11.4%	117 25.6%
Total		23 5.0%	104 22.8%	128 28.0%	121 26.5%	81 17.7%	457 100.0%

Note: Cases in **bold** cells represent contrarian cases. Cases in *italics* represent main effect.

Table 3b
Results from the contrarian case analysis (Chinese sample).

		Value, brand and relationship equity drivers					Total
		1	2	3	4	5	
Economic (Phi = .71, p < 0.001)	1	7 1.5%	*14* 3.1%	3 0.7%	**2** 0.4%	**0** 0.0%	26 5.7%
	2	7 1.5%	*40* 8.8%	25 5.5%	**2** 0.4%	**1** 0.2%	75 16.4%
	3	5 1.1%	26 5.7%	39 8.5%	33 7.2%	3 0.7%	106 23.2%
	4	**2** 0.4%	**15** 3.3%	48 10.5%	*55* 12.0%	*25* 5.5%	145 31.7%
	5	**2** 0.4%	**9** 2.0%	13 2.8%	*29* 6.3%	*52* 11.4%	105 23.0%
Total		23 5.0%	104 22.8%	128 28.0%	121 26.5%	81 17.7%	457 100.0%

Note: Cases in **bold** cells represent contrarian cases. Cases in *italics* represent main effect.

may be equally effective configurations of relevant factors. Furthermore, single causal conditions can be present or absent within any particular configuration. As a consequence, it is difficult to make clear predictions, so this paper does not attempt to set testable hypotheses. Instead, fsQCA is used to identify different combinations that lead to the same results or various combinations that lead to conflicting results. Fig. 1 presents the configuration model employed in this study.

3. Research method

3.1. Sample and data

Data were collected from Chinese universities in two medium-sized cities. The final sample (n = 457) primarily consisted of young (under 25 years old), middle-income Chinese customers. Young Chinese customers are the main target for most sports brands, thus they provide an appropriate sample for this study.

Industry, demographics, and culture affect CLV drivers (Rust et al., 2004). To determine if there are differences between nations, this paper chose to test the model in another national setting that was in geographical proximity to China (Bellis, Hildebrand, Ito, & Herrmann, 2015; Sun & Ko, 2016). As such, a parallel study surveyed Korean customers from a Korean university (n = 315). The target respondents had a similar profile to the Chinese sample (e.g., age and education background). One major sports clothing brand, a top-ranked brand in terms of market share in both China and Korea, was selected as the focal brand in both studies (see Table 1 for a summary of the two samples).

The components of sustainable marketing assessed in this study were based on Ferdous (2010), Fraj, Martínez, and Matute (2011), and Kärnä, Hansen, and Juslin (2003). Customer equity drivers were measured using well-tested scales (Rust et al., 2004). Constructs were measured using a 5-point Likert scale. The questionnaires used were written in Chinese and Korean for the respective samples. The study followed the translation/back-translation method outlined in Lonner and Berry (1986) in order to translate the original English scales into Chinese and Korean.

3.2. Reliability and contrarian case analysis

In this study, the statistical software packages SPSS 21.0 and fsQCA 2.5 were used for the analysis (Ragin & Davey, 2014). SPSS was used to test reliability, for contrarian case analysis, and for calibration. All of the factors in this study were found to be reliable (Table 2). The Cronbach's α for the Chinese sample ranged between 0.71 and 0.85, and for the Korean sample ranged between 0.69 and 0.85. Only value equity was lower than 0.70, although this is still considered acceptable (George & Mallery, 2003; Peterson, 1994).

This study uses contrarian case analysis to identify positive and negative cases. The data for all six variables was grouped using cross-tabulation analysis. Tables 3a to 3c present the Chinese sample results, and Tables 3d to 3f show the Korean sample results. The bolded cells indicate the positive and negative contrarian cases. A positive contrarian case represents a scenario in which a negative indicator supports a positive outcome, contrary to the assumption that a negative case will lead to a negative result (A → ~O, shown in the lower left of each table). Conversely, a negative contrarian case is one in which a positive indicator supports a negative outcome, when in most cases it is assumed a positive indicator will support a positive result (~A → O, shown in the upper right of each table; Wu et al., 2014).

All phi values were higher than 0.5 (p < 0.001), indicating a significant positive effect and that the majority of the cases support that assumption that high scores for environmental, economic, and social marketing dimensions drive high scores for value, brand, and relationship equity.

3.3. Calibration

Unlike conventional variables, fuzzy sets must be calibrated before the data is analyzed using fsQCA (Ragin, 2008; Wu et al., 2014). Two calibrations were used to calculate the mean values for the items in each construct using SPSS 21.0 and fsQCA 2.5. These calibrations had three breakpoints: 0 for full non-membership, 1 for full membership, and 0.5 for the crossover point for maximum membership ambiguity (Ragin, 2008; Wu et al., 2014). A score of 5 was the threshold for full membership, 1 indicated full non-membership, and 3 was the crossover point.

3.4. Consistency and coverage

QCA uses set theory to make logical statements about causal conditions (Ragin, 2000). The consistency index indicates whether a model is reliable in determining the membership scores for simple or complex antecedent conditions. The scores should be equal to or less than the membership score for the outcome condition across the cases. The consistency index should be > 0.85 for the model of antecedent conditions to be useful, and the coverage index should be higher than 0.05 (Woodside, 2015).

4. Findings

Four models are presented in this section. Models 1 and 2 were run on the Chinese sample and Models 3 and 4 were run on the Korean sample.

Table 3c
Results from the contrarian case analysis (Chinese sample).

		Value, brand and relationship equity drivers					Total
		1	2	3	4	5	
Social (Phi = .75, p < 0.001)	1	*2* 0.4%	*5* 1.1%	3 0.7%	0 0.0%	0 0.0%	10 2.2%
	2	*14* 3.1%	*23* 5.0%	17 3.7%	2 0.4%	0 0.0%	56 12.3%
	3	2 0.4%	52 11.4%	53 11.6%	14 3.1%	3 0.7%	124 27.1%
	4	3 0.7%	19 4.2%	35 7.7%	*65* 14.2%	*23* 5.0%	145 31.7%
	5	2 0.4%	5 1.1%	20 4.4%	*40* 8.8%	*55* 12.0%	122 26.7%
Total		23 5.0%	104 22.8%	128 28.0%	121 26.5%	81 17.7%	457 100.0%

Note: Cases in **bold** cells represent contrarian cases. Cases in *italics* represent main effect.

Table 3d
Results from the contrarian case analysis (Korean sample).

		Value, brand and relationship equity drivers					Total
		1	2	3	4	5	
Environmental (Phi = .53, p < 0.001)	1	*5* 1.6%	*6* 1.9%	6 1.9%	2 0.6%	0 0.0%	19 6.0%
	2	*12* 3.8%	*27* 8.6%	60 19.0%	11 3.5%	3 1.0%	113 35.9%
	3	1 0.3%	15 4.8%	53 16.8%	37 11.7%	6 1.9%	112 35.6%
	4	0 0.0%	4 1.3%	23 7.3%	*22* 7.0%	*8* 2.5%	57 18.1%
	5	0 0.0%	0 0.0%	5 1.6%	*4* 1.3%	*5* 1.6%	14 4.4%
Total		18 5.7%	52 16.5%	147 46.7%	76 24.1%	22 7.0%	315 100.0%

Note: Cases in **bold** cells represent contrarian cases. Cases in *italics* represent main effect.

4.1. Model 1

Model 1 determines which market sustainability dimension the firm was perceived to not to perform well in, thus reducing the customer equity drivers (~(value * brand * relationship)). The horizontal tilde "~" represents negation, the star "*" represents the logical "and" (Woodside, 2015). The modeling process yielded three solutions: complex, parsimonious, and intermediate. Following Ragin's (2000) suggestion, this study focuses only on the intermediate solutions (Table 4).

4.2. Model 2

Model 2 tests the sustainable marketing conditions that enhance customer perceptions of customer equity. Table 5 displays the results.

As can be seen in the results from Models 1 and 2, some of the sustainability marketing dimensions are missing. This does not mean that the firm failed to apply these dimensions in its sustainable marketing activities. Instead, their absence indicates that customers believed that the firm had applied them at only an average level (i.e., neither good nor bad). In other words, the firm is perceived to be doing an average job in a certain dimension and an average job in attracting customer attention to that dimension.

Model 1 indicates that, if the customers perceived any two of the marketing sustainable dimensions to be at normal levels and the other as being performed badly, customer equity was reduced. For example, for the antecedent (~environmental), when the firm's economic and social dimensions were at normal levels, there was a negative effect on customer equity. The environmental dimension explained a 62.7% negative effect. This result had a consistency value of 0.92. The other two antecedent results (~economic and ~social) exhibited similar negative consequences on customer equity. The economic dimension had a raw coverage of 0.61 and a unique coverage of 0.049 (i.e., 4.9% of the loss of customer equity was explained by this result), with a consistency of 0.94. The social dimension had a raw coverage of 0.62 and a unique coverage of 0.046 (i.e., 4.6% of the loss of customer equity was explained by this result), with a consistency of 0.95.

In Model 2, when all of the sustainable marketing dimensions were perceived to have been well implemented, the customer perceptions of customer equity drivers in the Chinese sample improved. The antecedent combination (social * ~environmental) had a raw coverage of 0.40, with a consistency of 0.87. The second antecedent combination (social * ~economic) had a raw coverage of 0.38 and a consistency of 0.86. The third antecedent combination (economic * ~environmental) had a raw coverage of 0.40 and a consistency of 0.87. The fourth antecedent combination (~social * economic) had a raw coverage of 0.38 and a consistency of 0.86. The fifth antecedent combination

(~economic * environmental) had a raw coverage of 0.38 and a consistency of 0.86. The last antecedent combination (~social * environmental) had a raw coverage of 0.38 and a consistency of 0.86.

4.3. Model 3

Model 3 for Korean consumers produced similar results to Model 1. When one of the sustainable marketing dimensions was perceived to be implemented poorly, there was a negative effect on customer equity (Table 6). The results show, for example, that the antecedent result (~environmental) had a raw coverage of 0.70, with a consistency of 0.95. The second antecedent result (~economic) had a raw coverage of 0.72, with a consistency of 0.93. The last antecedent result (~social) had a raw coverage of 0.71, with a consistency of 0.96.

4.4. Model 4

In Model 4, the Korean sample did not achieve a regulation consistency higher than 0.85. The consistency level should be as close to 1 as possible (although gaining consistency becomes less likely the more studies in a particular configuration are undertaken), and it is difficult to draw conclusions when consistency scores are below 0.75 (Ragin, 2006). Santos, Brochado, and Esperanca (2016), however suggest that 0.84 is the most acceptable cut-off, adopted for Model 4 adopts 0.84.

Only three combinations of marketing dimensions had an effect on customer equity, with the common denominator being the inclusion of the social marketing dimension (Table 7). Results show the antecedent combination (social * ~environmental) had a raw coverage of 0.66, with a consistency of 0.82. The second antecedent combination (social * ~economic) had a raw coverage of 0.69, with a consistency of 0.82. The third antecedent combination (~social * environmental * economic) had a raw coverage of 0.65, with a consistency of 0.85.

5. Conclusions and implications

To the best of our knowledge, this study is the first to use fsQCA to explore customer perspectives regarding sustainable marketing and customer equity. Rather than using structural equation modeling to identify positive or negative influences, fsQCA can reveal configurations that lead to the results of interest.

The similarly high consistency and raw coverage in Models 1 and 3 suggests that both Chinese and Korean customers have lower perceived customer equity when they perceive poor environmental, economic, or social marketing activities. In other words, if firms apply two sustainable dimensions at normal levels but fail to apply one dimension at an

Table 3e
Results from the contrarian case analysis (Korean sample).

		Value, brand and relationship equity drivers					Total
		1	2	3	4	5	
Economic (Phi = .57, p < 0.001)	1	*2* *0.6%*	*2* *0.6%*	1 0.3%	1 0.3%	1 0.3%	7 2.2%
	2	6 1.9%	*18* *5.7%*	11 3.5%	4 1.3%	1 0.3%	40 12.7%
	3	8 2.5%	25 7.9%	96 30.5%	29 9.2%	4 1.3%	162 51.4%
	4	1 0.3%	7 2.2%	33 10.5%	*35* *11.1%*	9 2.9%	85 27.0%
	5	1 0.3%	0 0.0%	6 1.9%	7 2.2%	7 2.2%	21 6.7%
Total		18 5.7%	52 16.5%	147 46.7%	76 24.1%	22 7.0%	315 100.0%

Note: Cases in **bold** cells represent contrarian cases. Cases in *italics* represent main effect.

Table 3f
Results from the contrarian case analysis (Korean sample).

		Value, brand and relationship equity drivers					Total
		1	2	3	4	5	
Social (Phi = .67, p < 0.001)	1	*4* *1.3%*	*5* *1.6%*	0 0.0%	0 0.0%	0 0.0%	9 2.9%
	2	7 2.2%	*15* *4.8%*	21 6.7%	5 1.6%	0 0.0%	48 15.2%
	3	6 1.9%	30 9.5%	89 28.3%	31 9.8%	6 1.9%	162 51.4%
	4	1 0.3%	2 0.6%	35 11.1%	*34* *10.8%*	8 2.5%	80 25.4%
	5	0 0.0%	0 0.0%	2 0.6%	6 1.9%	8 2.5%	16 5.1%
Total		18 5.7%	52 16.5%	147 46.7%	76 24.1%	22 7.0%	315 100.0%

Note: Cases in **bold** cells represent contrarian cases. Cases in *italics* represent main effect.

acceptable level, they will weaken the value, brand, and relationship drivers of customer equity. This does not mean, however, that customers require strict sustainable regulations or that firms must equally balance the three dimensions to retain customer equity (Sun & Ko, 2016). For example, the results for Model 4 show that, in Korea, a firm might be perceived to be performing poorly in terms of environmental or economic dimensions, but perceived high performance in social marketing activities can have positive customer equity effects. However, if a firm performs poorly on the social dimension, it must have both excellent environmental and economic activities to maintain customer equity.

This research supports Sun and Ko (2016), who reported that Koreans pay more attention to social issues such as welfare and justice. Korean firms, or firms targeting Korean markets, must thus pay critical attention to their social image. They must consider employee welfare, provide customer feedback that assures customers of their attention to customer relationships, and establish a socially responsible image.

The Chinese customer results were more variable than those for the Korean customers. Six conditions can cover a poor marketing performance in terms of environmental, economic, or social activities (Table 8). The results from Model 2 indicate that, when a firm performs poorly in one sustainable dimension, normally on one dimension, and excellently the third dimension, the customer will still perceive the three equity drivers to be enhanced. Table 8 shows that firms can enhance customer equity by engaging in the three types of sustainable activity.

A Chinese firm, for example, may be perceived to be performing poorly in its economic marketing, but it can attract green customers by establishing a strong eco-friendly image or by producing green products. Another firm may have an acceptable social performance, but it can further improve its socially responsible image by developing innovative products or services that improve social conditions. Likewise, a firm that is perceived to be economically strong may generate good profits, but if it has a poor environmental record, it may eventually face regulation by overseeing authorities. To avoid this future risk, the firm must be innovative regarding its methods, products, or business model. If an economically strong firm has poor social performance, the firm must improve its social conditions, perhaps by reinforcing employee welfare or by finding a new location where they have policy support. Finally, a social firm that has a poor environmental image must improve this image while also focusing on raising its social responsibility, and a firm that has a poor economic performance must change its business model or update its products or services.

This study adds to the literature in that it reaffirms that sustainable marketing drivers have a positive influence on the drivers of customer equity, highlighting the importance of sustainable marketing efforts, despite previous conflicting results (e.g. Sun & Ko, 2016). There are

Table 4
Customer perceptions of conditions that reduce customer equity drivers (intermediate solution).

Causal configuration	Raw coverage	Unique coverage	Consistency
~Environmental	0.626697	0.045609	0.915512
~Economic	0.612027	0.048553	0.937333
~Social	0.616717	0.045858	0.945312
Solution coverage: 0.765320			
Solution consistency: 0.884589			

Table 5
Customer perceptions of conditions that lead to enhanced customer equity drivers (intermediate solution).

Causal configuration	Raw coverage	Unique coverage	Consistency
Social * ~environmental	0.401793	0.000585	0.866023
Social * ~economic	0.383048	0.000468	0.865991
Economic * ~environmental	0.403235	0.000039	0.865785
~Social * economic	0.379034	0.000234	0.857748
~Economic * environmental	0.380515	0.000662	0.862697
~Social * environmental	0.379151	−0.000000	0.863955
Solution coverage: 0.491349			
Solution consistency: 0.799038			

Table 6
Korean customer perceptions of conditions leading to reduced customer equity (intermediate solution).

Causal Configuration	Raw coverage	Unique coverage	Consistency
~Environmental	0.696998	0.035938	0.949851
~Economic	0.718870	0.042999	0.933293
~Social	0.711981	0.033067	0.963113
Solution coverage: 0.823583			
Solution consistency: 0.915624			

Table 7
Korean customer perceptions of conditions leading to enhanced customer equity drivers (intermediate solution).

Causal configuration	Raw Coverage	Unique Coverage	Consistency
Social * ~environmental	0.663305	0.027910	0.823778
Social * ~economic	0.690931	0.043747	0.824771
~Social * environmental * economic	0.653434	0.027910	0.847706
Solution coverage: 0.770755			
Solution consistency: 0.795383			

ARTICLE IN PRESS

Y. Sun et al.   Journal of Business Research xxx (xxxx) xxx–xxx

Table 8
Chinese customer perceptions of types of sustainable marketing activities.

Type	Environmental	Economic	Social
Condition 1	Poor economic performance (establish good eco-friendly image)	Poor environmental performance (change company image and business model or develop new competitive advantage)	Poor environmental performance (establish good social image and, especially, environmental image)
Condition 2	Poor social performance (innovate eco-friendly products and establish responsible image)	Poor social performance (improve social conditions or find a locations suitable for development and policy support)	Poor economic performance (adjust to policy and innovate business model)

various tradeoffs that can be made. For example, this study notes a difference in terms of the importance of the dimensions between the two focal countries. In China, a firm can concentrate on at least one of the dimensions, and this will influence their value equity drivers, so they do not need to concentrate on all of them if they have limited resources. The same advice does not hold true for Korea, where, if a firm has to make a choice as to which sustainable marketing dimension to concentrate on to influence customer equity drivers, it is suggested they focus on the social dimension.

This study has several limitations that suggest directions for future research. First, the tests were limited to conditions that raise and lower three customer equity drivers without introducing CLV into fsQCA. Further research can explore the details of sustainable marketing dimensions in terms of their influence on each customer equity driver and calculate CLV to identify the top 20% heaviest users and analyze their behavior.

Second, this study focused only on sustainable marketing and customer equity without considering other potential variables that may improve customer equity drivers. For example, this study did not take into account demographic attributes such as gender, age, and education background, which have been suggested by researchers in the past (Woodside, 2015; Wu et al., 2014). Future research can include demographic variables to improve the comprehensiveness of the findings.

Third, this study focused on young Chinese and Korean customers. Future research should extend the research by comparing Eastern and Western cultures or by comparing corporate and customer perspectives. Customers in different cultures may have different sustainability standards. Finally, this paper only focused on one firm's activities. Future research should investigate whether these results hold for other companies and industries.

Acknowledgement

References

Bansal, P. (2005). Evolving sustainability: A longitudinal study of corporate sustainable development. *Strategic Management Journal, 26*(3), 197–218.

Bellis, E., Hildebrand, C., Ito, K., & Herrmann, A. (2015). Cross-national differences in uncertainty avoidance predict the effectiveness of mass customization across East Asia: A large-scale field investigation. *Marketing Letters, 26*, 309–320.

Blattberg, R., & Deighton, J. (1996). Manage marketing by the customer equity test. *Harvard Business Review, 74*, 136–145.

Carr, A., Drennan, J., & Andrews, L. (2016). Measuring customer equity and managing the customer asset: An explanatory study in the Australian hotels. *Journal of Marketing Management, 32*(17–18), 1670–1700.

Charlo, M. J., Moya, I., & Muñoz, A. M. (2015). Sustainable development and corporate financial performance: A study based on the FTSE4Good IBEX index. *Business Strategy and the Environment, 24*, 277–288.

Elkington, J. (1994). Towards the sustainable corporation: Win-win-win business strategies for sustainable development. *California Management Review, 36*(2), 90–100.

Erdem, T., Swait, J., Broniarczyk, S., Chakravarti, D., Kapferer, J., Keane, M., ... Zettelmeyer, F. (1999). Brand equity, consumer learning and choice. *Marketing Letters, 10*(3), 301–318.

Ferdous, A. S. (2010). Applying the theory of planned behavior to explain marketing managers' perspectives on sustainable marketing. *Journal of International Consumer Marketing, 22*, 313–325.

Fraj, E., Martínez, E., & Matute, J. (2011). Green marketing strategy and the firm's performance: The moderating role of environmental culture. *Journal of Strategic Marketing, 19*(4), 339–355.

Frank, B., Abulaiti, G., & Enkawa, T. (2012). What characterizes Chinese consumer behavior? A cross-industry analysis of the Chinese diaspora in Japan. *Marketing Letters, 23*, 683–700.

George, D., & Mallery, P. (2003). *SPSS for windows step by step: A sample guide & reference.* Boston: Allyn & Bacon.

Kärnä, J., Hansen, E., & Juslin, H. (2003). Social responsibility in environmental marketing planning. *European Journal of Marketing, 37*(5/6), 848–871.

Kim, A. J., & Ko, E. (2012). Do social media marketing activities enhance customer equity? An empirical study of luxury fashion brand. *Journal of Business Research, 65*, 1480–1486.

Kim, J., Taylor, C. R., Kim, K. H., & Lee, K. H. (2015). Measures of perceived sustainability. *Journal of Global Scholars of Marketing Science, 25*(2), 182–193.

Kotler, P. (2011). Reinventing marketing to manage the environmental imperative. *The Journal of Marketing, 75*(July), 132–135.

Kumar, V. (2018). Transformative marketing: The next 20 years. *Journal of Marketing, 82*, 1–12.

Lee, C. H., Ko, E., Tikkanen, H., Phan, M. C. T., Aiello, G., Donvito, R., & Raithel, S. (2014). Marketing mix and customer equity of SPA brands: Cross-cultural perspectives. *Journal of Business Research, 67*, 2155–2163.

Lemon, K. N., Rust, R. T., & Zeithaml, V. A. (2001). What drives customer equity. *Marketing Management, 10*(1), 20–25.

Liu, C. R., Ge, L. F., Lin, W. R., Kuo, M. L., & Tsui, C. H. (2014). Customer equity models for mainland China and Taiwan's economy hotels. *Asia Pacific Journal of Tourism Research, 19*(12), 1463–1480.

Liu, M. T., Wong, I. A., Shi, G., Chu, R., & Brock, J. (2014). The impact of corporate social responsibility (CSR) performance and perceived brand quality on customer-based brand preference. *Journal of Services Marketing, 28*(3), 181–194.

Löbler, H. (2017). Humans' relationship to nature-framing sustainable marketing. *Journal of Services Marketing, 31*(1), 73–82.

Lonner, W. J., & Berry, J. W. (1986). *Field methods in cross-cultural research. 8.* London: Sage.

Mariadoss, B. J., Tansuhaj, P. S., & Mouri, N. (2011). Marketing capabilities and innovation-based strategies for environmental. *Industrial Marketing Management, 40*, 1305–1318.

McClelland, D. C. (1998). Identifying competencies with behavioral-event interviews. *Psychological Science, 9*, 331–339.

McNamara, C. (2015). Trade liberalization, social policies and health: An empirical case study. *Globalization and Health, 11*(1), 1–19.

Ou, Y. C., Verhoef, P. C., & Wiesel, T. (2016). The effects of customer equity drivers on loyalty across services industries and firms. *Journal of the Academy of Marketing Science,* 1–21.

Peterson, R. A. (1994). A meta-analysis of Cronbach's coefficient alpha. *Journal of Consumer Research, 21*(2), 381–391.

Ragin, C. C. (2000). *Fuzzy set social science.* Chicago: University of Chicago Press.

Ragin, C. C. (2006). *User's guide to fuzzy-set/qualitative comparative analysis 2.0.* Tucson, Arizona: Department of Sociology, University of Arizona.

Ragin, C. C. (2008). *Redesigning social inquiry: Fuzzy sets and beyond.* Chicago: University of Chicago Press.

Ragin, C. C., & Davey, S. (2014). *Fuzzy-set/qualitative comparative analysis 2.5.* Irvine, California: Department of Sociology, University of California.

Ragin, C. C., & Fiss, P. C. (2008). Net effects analysis versus configurational analysis: An empirical demonstration. In C. C. Ragin (Ed.). *Redesigning social inquiry: Fuzzy sets and beyond* (pp. 190–212). Chicago: University of Chicago Press.

Roy, D., Verplanken, B., & Griffin, C. (2015). Making sense of sustainability: Exploring the subjective meaning of sustainable consumption. *Applied Environmental Education & Communication, 14*, 187–195.

Rust, R. T., Lemon, K. N., & Zeithaml, V. A. (2004). Return on marketing: Using customer equity to focus marketing strategy. *Journal of Marketing, 68*, 109–127.

Santos, M., Brochado, A., & Esperanca, J. (2016). Foreign direct investment patterns of global hotel chains. *Journal of Business Research, 69*, 5235–5240.

Shin, Y., & Thai, V. V. (2014). The impact of corporate social responsibility on customer satisfaction, relationship maintenance and loyalty in the shipping industry. *Corporate Social Responsibility and Environmental Management, 22*(6), 381–392.

Song, S., & Ko, E. (2017). Perceptions, attitudes, and behaviors toward sustainable fashion: Application of Q and Q-R methodologies. *International Journal of Consumer Studies, 41*(3), 264–273.

Sun, Y., Garrett, T. C., & Kim, K. H. (2016). Do Confucian principles enhance sustainable marketing and customer equity? *Journal of Business Research, 69*, 3772–3779.

Sun, Y., Kim, K. H., & Kim, J. (2014). Examining relationships among sustainable orientation, perceived sustainable marketing performance, and customer equity in fast fashion industry. *Journal of Global Fashion Marketing, 5*(1), 74–86.

Sun, Y., & Ko, E. (2016). Influence of sustainable marketing activities on customer equity. *Journal of Global Scholars or Marketing Science, 26*(3), 270–283.

Tsao, H. Y. (2013). Budget allocation for customer acquisition and retention while balancing market share growth and customer equity. *Marketing Letters, 24*, 1–11.

Woodside, A. G. (2015). Visualizing matching generalizing: Case identification hypotheses and case-level data analysis. *Australasian Marketing Journal, 23*, 246–258.

Woodside, A. G. (2016). The good practices manifesto: Overcoming bad practices pervasive in current research in business. *Journal of Business Research, 69*, 365–381.

Woodside, A. G., Hsu, S. Y., & Marshall, R. (2011). General theory of cultures' consequences on international tourism behavior. *Journal of Business Research, 64*(8), 785–799.

Woodside, A. G., Schpektor, A., & Xia, X. (2013). Triple sense-making of findings from marketing experiments using the dominant variable based-logic, case-based logic, and isomorphic modeling. *International Journal of Business and Economics, 12*(2), 131–153.

Wu, P. L., Yeh, S. S., Huan, T. C., & Woodside, A. G. (2014). Applying complexity theory to deepen service dominant logic: Configural analysis of customer experience-and-outcome assessments of professional services for personal transformations. *Journal of Business Research, 67*(8), 1647–1670.

Xie, X., Fang, L., & Zeng, S. (2016). Collaborative innovation network and knowledge transfer performance: A fsQCA approach. *Journal of Business Research, 69*, 5210–5215.

Yilmaz, A. K., & Flouris, T. (2010). Managing corporate sustainability: Risk management process based perspective. *African Journal of Business Management, 4*, 162–171.

Yu, Y., & Choi, Y. (2014). Corporate social responsibility and firm performance through the mediating effect of organizational trust in Chinese firms. *Chinese Management Studies, 8*(4), 577–592.

Zhang, H., Ko, E., & Lee, E. (2013). Moderating effects of nationality and product category on the relationship between innovation and customer equity in Korea and China. *Journal of Product Innovation Management, 30*(1), 110–122.