Journal of Business Research xxx (xxxx) xxx–xxx

Contents lists available at ScienceDirect

Journal of Business Research

journal homepage: www.elsevier.com/locate/jbusres

Sustainable fashion index model and its implication

Huanzhang Wang[a], Honglei Liu[b,*], Sang Jin Kim[a], Kyung Hoon Kim[a]

[a] Changwon National University, Republic of Korea
[b] Dalian University of Foreign Languages, China

ARTICLE INFO

Keywords:
Fashion
Sustainability
Index
Customer equity
Satisfaction

ABSTRACT

The fashion products are believed that reinforce the inequities, exploit workers, spur resource use, increase environmental impact, and generate waste. Sustainability has been recognized as a major concern worldwide, and this also increases considerations regarding the challenges to business need to be faced in the fashion industry. How much sustainable value do customers perceived and how much does the evaluation from customer upon the sustainable performance influence their customer equity? For answering this question, the ACSI (American Customer Satisfaction Index) is selected as the theory of this study. Based on ACSI this study applies an index to measure the fashion companies' sustainable performance in retailing and supply chain based on consumer's evaluation. In this model, perceived sustainable quality, perceived sustainable value and sustainable expectation are designed as influencing factors.

1. Introduction

The global apparel industry is worth $3 trillion, accounts for 2% of the world's Gross Domestic Product (GDP), and employs 33.0 million textile workers, an increase from 19.7 million during the past 25 years. Despite the economic value, the fashion industry has negative social environmental impacts such as worker exploitation, overuse of resources, and waste generation (Fletcher, 2007). Consequently, the fashion industry has tried to become more efficient by lowering prices (Reiley & DeLong, 2011) while meeting needs for sustainable development (Kong, Ko, Chae, & Mattila, 2016) and customer desires for green products (Kong & Ko, 2017). Thus, the fashion industry is becoming more eco-friendly by transforming consumption patterns (Niinimäki & Hassi, 2011). However, the production and consumption improvements have reached a peak in deriving benefits. The public is now aware of sustainability reports and CSR reports showing that most famous fashion brand managers have adopted sustainable strategies to achieve competitive advantage and to meet the direct and indirect interests of the shareholders, employees, customers, community pressure groups, and other stakeholders, without affecting their future needs (Niinimäki & Hassi, 2011).

How do consumers assess sustainability in fashion industry? How do their assessments then affect the interests of fashion stakeholders? How does the popularity of sustainability affect future profitability? Does sustainability transfer to competitive advantage? To answer those questions, this study selected the American Customer Satisfaction Index (ACSI) (Fornell, Johnson, Anderson, Cha, & Bryant, 1996) as basis for our study. ACSI is a cumulative assessment of market distributions rather than particular transaction assessments. The index will allow us to measure sustainable performance in retail and supply chains based on consumer evaluations and to build a constructive model testing whether personal subjective judgments influence evaluations of sustainable behavior. Perceived sustainable quality, sustainable value, and sustainable expectations are included as influence factors. The constructive model also includes customer equity to test how evaluations of sustainable behavior affect long-term value.

Objectives of this study are: a) to define the dimensions of sustainability in fashion industry, b) to identify variables which can influence sustainable activities of fashion companies, c) to construct the measurements of sustainability of fashion companies, d) to test sustainable fashion index model, and e) to generate the implications for sustainable fashion industry based upon the results of this study.

2. Theoretical development

2.1. Sustainable performance

Sustainability is used to indicate that economic, social, and environmental needs of today are balanced with the needs of tomorrow's generations. For companies, the balance means building economic growth, corporate reputation, customer relationships, quality, and service, while showing corporate responsibility (CSR) in creating sustainable employment opportunities, creating value for stakeholders, and meeting underserved needs (Chang, Jang, Lee, Lee, & Chang, 2017;

* Corresponding author.
E-mail address: honglei.liu2010@hotmail.com (H. Liu).

https://doi.org/10.1016/j.jbusres.2017.12.027
Received 3 April 2017; Received in revised form 13 December 2017; Accepted 15 December 2017

Mazanov & Woolf, 2017).

Sustainable development "meets the needs of the present without compromising the ability of future generations to meet their own needs" (UNWCED, 1987). Sustainability efforts account for the total environmental costs of product manufacture and consumption (Peattie, 2001). Sustainable marketing includes sustainable economic development (van Dam & Apeldoorn, 1996) in a sustainable economy (Hunt, 2011). Sustainability operations require companies to integrate goals, policies, ideologies, and action plans that share a common "worldview" (Bridges & Wilhelm, 2008) regarding economic, ecological, and social sustainability (Savitz & Weber, 2006).

Corporate sustainability indicates that all aspects of company performance are sustainable (Schaltegger & Wagner, 2011), from the behavior of individual employees to performance throughout the value chain (Fiksel, McDaniel, & Mendenhall, 1999). Consequently, companies wishing to institute sustainable performance should provide training and evaluate employees accordingly (Spreitzer & Porath, 2012).

Sustainable performance research generally focuses on construction, metallurgy, and medical industries and uses sustainable performance indicators evaluating sustainable supply chain and cost-benefit balances. Customers generally form repurchase decisions according to their perceptions regarding quality, price, and fissionability. If they perceive that a company is sustainable, they will be loyal customers and the company should enjoy long-term profitability (Székely & Knirsch, 2005). Thus, managers should balance economic, social, and environmental objectives in their quest for sustainability.

2.1.1. Economic objectives

Company profitability, an important indicator of sustainability, depends on price and promotion advantages (Dekimpe & Hanssens, 1999) that attract customers. Strategic price promotions evoke customer response; quality and price maintain customer loyalty. Conventional economic theory (Monroe, 1973) indicates that fashion customers perceive risk when unfamiliar brands have high prices, but if they know a brand is of high quality, they will form greater purchase intentions.

Company operations, including management quality and service systems, are another variable of company profitability (Dekimpe & Hanssens, 1999). Fashion consumers often doubt the quality of fashion clothing and customer service and reduce their purchase intentions (Chan & Wong, 2012), but not if they perceive sustained profitability according to quality, promotion, management quality, and service systems. This study therefore measures *economy* as including price, quality, promotion, management quality, and service systems.

2.1.2. Environmental objectives

Customers will be satisfied and have repurchase intentions when they perceive that a company has high quality products and services (Chan & Wong, 2012). To counter the extreme waste inherent in the fashion industry, fashion companies have adopted the *eco-efficiency approach* in which recycling is encouraged throughout the supply chain (Ciasullo, Cardinali, & Cosimato, 2017). Green products meet environmental concerns and market demands for environmental sustainability (Berchicci & Bodewes, 2005), so fashion companies turn to biodegradable or recycled materials (Wong, 2012). Environmental management practices, recyclable products, and reduced packaging waste are especially needed (Wong, Lai, Shang, Lu, & Leung, 2012) to improve the prevailing image of low-priced, low-quality, frequently replaced, and wasteful fashion products that have short life cycles (Niinimäki & Hassi, 2011).

Customer service centrally focuses on achieving consumer satisfaction (Stahel, 2001) and higher product and performance evaluations without increasing waste. To achieve more consumer satisfaction, fashion product designs often use green and recycled raw material (Howarth & Hadfield, 2006), although fashion consumers focus primarily on esthetics in judging fashion products (Joergens, 2008). Consequently, this study evaluates whether companies use recycled products/packaging, reduce waste, curb energy use, and use new technology/product designs in environmentally friendly ways.

2.1.3. Social objectives

Social factors can also influence fashion consumers' purchase decisions. Product design plays a strong role in value co-creation (Niinimäki, 2010). When consumers are committed and companies put effort into creating value, both customers and company enjoy socially valuable co-creation approaches. Consumers are then more emotionally attached to the products. Fashion consumers often have a symbolic sense of being socially superior and responsible, and often express their personal identity by choosing ethical brands (Niinimäki, 2010). Thus companies can increase profits by showing social responsibility, which requires diverting company resources for purposes other than profit. In general, CSR requires that companies and employees share core visions and values that affect corporate branding and stakeholder perceptions (Knox & Maklan, 2004).

2.1.4. Cultural objectives

Culture is "the collective programming of the mind which distinguishes the members of one group or society from those of another" (Hofstede, 1984). Uncertainty avoidance, indicating the desire to avoid ambiguity, is one of the most distinctive cultural values (Hofstede, 1984). How can organizational culture, as a reflection of human values, reduce uncertainty and ambiguity? Individuals derive cultural well-being when they experience positive cultural activity, economic development, heritage maintenance, urban planning, recreation and sports amenities, community health policies, and community development strategies. In addition, fashion consumers construct their self-identities and self-concepts according to brand culture (Sabah, 2017).

Markets and consumers impact art and celebration processes. The artist/consumer relationship is complex in that artists represent both product and producer in creating products and communications for consumers (Kubacki & Croft, 2004). By keeping fashion products culturally diverse, designers maintain consumer diversity and comparative advantage. Thus, customers may perceive that high-level fashion products adhere to higher environmental protection requirements such as recycling and waste reduction. By including environmental protection, fashion products encourage cultural wellbeing. Indeed, the New Zealand government identified cultural protection as a factor in cultural well-being (Dalziel, Matunga, & Saunders, 2006). Therefore, a culture that emphasizes environmental protection may increase sustainability.

2.2. Sustainable fashion index

This study used the American Customer Satisfaction Index (ACSI) to measure sustainable behavior in fashion companies. The ACSI indicates satisfaction regarding the quality of products and services based on purchase experiences and allows us to measure customer satisfaction regarding sustainability and value in fashion companies. In addition to customer experiences, ACSI focuses on future estimates, allowing us to link customer evaluations to repurchase intentions. Fig. 1 shows our model based on the ACSI model:

2.2.1. Antecedents

The ACSI model recognizes perceived quality, perceived value, and customer expectations as antecedents to customer satisfaction. This study follows those antecedents to evaluate customer satisfaction regarding sustainability performance in fashion companies.

2.2.1.1. Perceived quality. Overall customer satisfaction first depends on consumer evaluations of recent purchase experiences (Chen & Chang, 2013; Fornell et al., 1996). Based on ACSI (Fornell et al., 1996), this study draw on the quality literature to delineate two

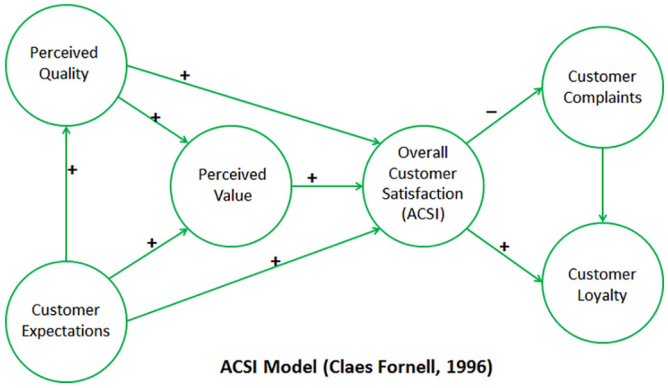

Fig. 1. The American Customer Satisfaction Index (ACSI) model.

essential consumption experiences that will cause consumers to perceive quality in fashion companies: (1) Fashion companies must make sustainable efforts to customize products and services to meet varying customer needs. (2) Fashion products and services must be reliable, standardized, and non-defective.

2.2.1.2. Perceived value. Perceived value is the second determinant of overall customer satisfaction (Fornell et al., 1996). By adding perceived value, this study can compare outcomes among firms, industries, and sectors (Chen & Chang, 2012). This study identifies sustainability as important to the fashion industry and test customer satisfaction regarding perceptions of sustainability of products and prices.

2.2.1.3. Customer expectations. According to ACSI, customers form future expectations regarding product and service consumption experiences through advertising or word-of-mouth (Ho & Zheng, 2004). Their expectations then influence their overall satisfaction with the product and its sustainability, which will then affect the establishment of customer relationships.

2.2.2. Consequences

The ACSI used exit-voice theory to explain that increased customer satisfaction leads to increased customer loyalty and decreased customer complaints. In contrast, decreased customer satisfaction leads to increased complaining or exiting (Fornell & Wernerfelt, 1987). Thus, customer satisfaction, customer loyalty, and customer complaints interact dynamically. According to the ACSI model, customer loyalty indicates profitability through increased yield rate (Reichheld & Sasser, 1990). For our index, this study expanded customer loyalty to include customer equity, which also indicates future profitability. Customer equity is a calculation of lifetime contributions of each client. For this study, this study observes the relationship between customer equity and customer complaints.

Customer equity is the sum of customer lifetime value based on profits, costs, and cash flow (Rust, Moorman, & Dickson, 2002; Wang, Kim, Ko, & Liu, 2016) and includes value equity, brand equity, and relationship equity (Blattberg & Deighton, 1996). Value equity indicates customers' objective assessments of a company based on their total perceptions. Brand equity indicates their subjective and intangible brand assessments. Relationship equity indicates that companies and customers share strong structural ties so that customers will perceive that the company is fair and they will be reluctant to establish relationships with other providers. In this study, this study uses the three drivers of customer equity to examine the influence of consumer satisfaction regarding fashion product sustainability on the long-term value of fashion companies.

3. Methodology

3.1. Hypotheses design

The ACSI model is designed to study the antecedents of overall customer satisfaction (expectations, perceived quality, and value) as they affect loyalty and complaints. When consumers perceive that products and services have quality, they form overall impressions that the products and services are comparatively superior and excellent (Zeithaml, 1988). When they perceive value, they engage in a process of cognitive trade-off between perceived quality and sacrifice (Dodds, Monroe, & Grewal, 1991), which then leads to perceptions that products and services have value. Aligned with our focus on sustainability, this study hypothesizes:

H1. Fashion consumers who perceive that products and services are sustainable will perceive that products and services are more valuable.

Consumers form future expectations according to their previous overall past purchase experiences, their exposure to advertisements including word-of mouth, and their estimations regarding future product or service quality (Fitzgerald, 2017). Customer expectations should be positively related with their overall satisfaction with product and service performance (Fornell et al., 1996). Previous experiences should also affect perceptions regarding the company's ability to meet future market demands.

Customer expectations indicate customer perceptions of lifetime quality and value and are thus essential in company/customer relationships. The higher the customer expectations, the longer they expect products or services to last. Consequently, high expectations

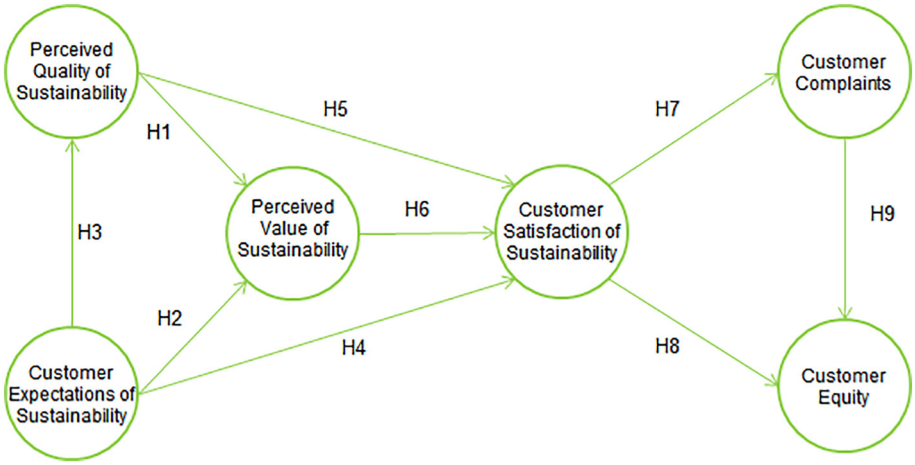

Fig. 2. Sustainable fashion index.

Table 1
Measurements.

Factors	Measurements	References
Economic	Marketing strategy (price, quality, promotion)	Dekimpe and Hanssens (1999) and Chan and Wong (2012)
	Operation management	
Environment	Recycled products/packaging	Ciasullo et al. (2017), Wong (2012), and Wong et al. (2012)
	Waste/energy reducing	
	New technology/design product	
Social	Charitable contributions	Niinimäki (2010) and Knox and Maklan (2004)
	Corporate reputation	
	Employee training (behavior, communication, attitude, support)	
Culture	Environment and culture protection ideas in product design	Sabah (2017), Kubacki and Croft (2004), and Dalziel et al. (2006)
	Cultural diversity of products	
	Support for arts and cultural expression	
Perceived quality of sustainability	Overall sustainable quality	Fornell et al. (1996)
	Expectation of sustainable quality	
	The distance between expectations and perceived sustainable quality	
Perceived value of sustainability	Rating of sustainable quality given price	
	Rating of price given sustainable quality	
Customer expectations of sustainability	Overall expectation of quality	
	Expectation regarding customization, or how well the product fits the customer's personal requirements	
	Expectation regarding reliability or how often things would go wrong	
Customer complaints	Has the customer complained formally or informally about the sustainable property of products or services?	
Value equity	Good quality/price/convenience	Lemon et al. (2001)
Brand equity	Advertising/information/brand image/events/respect/image	
Relationship equity	Loyalty program/treatment/information/special/community/trust	

Table 2
Demographic information.

Variable	Category	China		Korea	
		Frequency	%	Frequency	%
Age	Under 20	28	5	48	16.7
	20–30	209	36.9	91	31.6
	30–40	182	32.1	97	33.7
	40–50	112	19.8	20	7
	0ver 50	35	6.2	20	7
Education	High school	163	28.8	86	29.9
	Bachelor's degree	302	53.4	159	55.2
	Master's degree	82	14.5	28	9.7
	Doctorate	19	3.3	15	6.6
Gender	Man	179	31.6	132	45.8
	Woman	387	68.4	156	54.2
Annual income	Less than US $10,000	82	14.5	0	0
	US $10,000–US $20,000	178	31.4	31	11
	US $20,000–US $40,000	186	32.9	124	43.7
	US $40,000–US $80,000	82	14.5	86	30.3
	More than US $80,000	38	6.7	43	15.1

Table 3
Reliability analysis and CFA of index measurements.

Variables	Items	Factor loading	Cronbach's α
Economic	Marketing strategy (price, quality, promotion)	0.891	0.903
	Operation management	0.866	
Environment	Recycled products/packaging	0.855	0.865
	Waste/energy reduction	0.857	
	New technology/design	0.871	
Social	Charitable contributions	0.811	0.824
	Corporate reputation	0.801	
	Employee training	0.819	
Culture	Environmental and cultural protection ideas in product design	0.731	0.755
	Cultural diversity of products	0.717	
	Support for arts and cultural expression	0.708	

should positively impact perceived quality and perceived value.

H2. High customer expectations positively influence perceptions of sustainability.

H3. High sustainability expectations positively influence perceived value of sustainability.

H4. High sustainability expectations positively influence satisfaction.

An antecedent of overall customer satisfaction is *perceived quality*, indicating customer evaluations of the market's recent performance (Fornell et al., 1996). Another antecedent is *perceived value*, indicating whether consumers feel they paid a fair price for the product or service. Satisfaction is a post-consumption comparison as to whether expectations of quality were realized in the form of perceived quality (Anderson, Fornell, & Lehmann, 1994). If value is perceived, overall customer satisfaction results. Consequently, when fashion consumers perceive that products and services have sustainable quality and value, they should be satisfied customers.

H5. Perceived quality of sustainability positively influences customer satisfaction with sustainability.

H6. Perceived value of sustainability positively influences customer satisfaction with sustainability.

Considering our focus on sustainability, this study expects that satisfaction with product sustainability will positively influence purchase experiences. The ACSI model indicates that dissatisfaction with products or services leads to customer complaints (Fornell et al., 1996), while increased customer satisfaction decreases customer complaints (Mathur, Das, & Kanti Paul, 2016; Park, 2017). Thus when consumers are satisfied with the sustainability of fashion products, they should be less likely to complain. Consequently, this study hypothesizes:

H7. Customer satisfaction with sustainability negatively influences complaints.

Price, quality, and convenience generate value equity (Lemon, Rust, & Zeithaml, 2001), which indicates customer perceptions that they received good quality in exchange for prices paid for goods and services and then attach value to the experience. Customer equity also represents the firm's contribution to the firm/customer relationship

Table 4
Hypotheses test.

Hypotheses		Estimate	S.E.	C.R.	P	Result
H1	Quality → Value	1.140	0.099	11.53	***	Supported
H2	Expectations → Value	0.198	0.079	2.503	*	Supported
H3	Expectations → Quality	0.045	0.054	0.836	0.403	Rejected
H4	Expectations → Satisfaction	0.065	0.047	1.378	0.168	Rejected
H5	Quality → Satisfaction	0.197	0.075	2.617	**	Supported
H6	Value → Satisfaction	1.127	0.163	9.777	.***	Supported
H7	Satisfaction → Complaint	− 0.778	0.109	− 7.154	***	Supported
H8a	Satisfaction → Value equity	− 0.007	0.064	− 0.113	0.910	Rejected
H8b	Satisfaction → Brand equity	0.321	0.073	4.392	***	Supported
H8c	Satisfaction → Relationship equity	0.945	0.071	13.35	***	Supported
H9a	Complaint → Value equity	0.031	0.084	1.51`	0.522	Rejected
H9b	Complaint → Brand equity	− 0.288	0.078	− 3.694	**	Supported
H9c	Complaint → Relationship equity	0.015	0.064	0.959	0.221	Rejected

GFI = 0.909, NFI = 0.953, IFI = 0.971, TLI = 0.967, CFI = 0.971 RSMEA = 0.050.

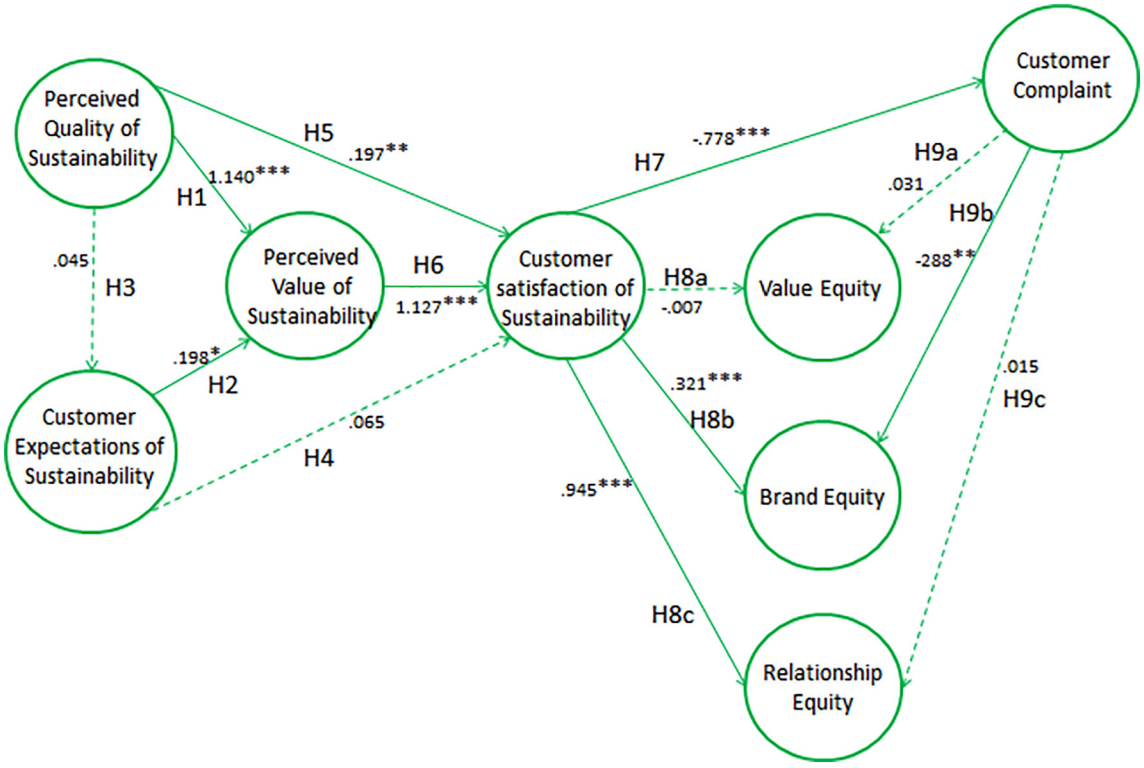

Fig. 3. Model test results.

regarding how well it fulfills promises. Price, quality, and convenience can be used to assess customer satisfaction (Rust et al., 2002). In our fashion product context, this study expects that consumer satisfaction regarding sustainability will affect their evaluations of the company regarding perceived value and quality.

In a discussion of customer satisfaction and consumer-based retailer equity relationships (Pappu, Quester, & Cooksey, 2006), brand equity was conceptualized as a four-dimensional structure consisting of consciousness, association, perceived quality, and loyalty. Consumer-based brand equity is the equity customers associate with a retail brand (Pappu, Quester, & Cooksey, 2005; Yoo & Donthu, 2001). Satisfaction positively influences customer loyalty (Fornell et al., 1996). Customers are connected with brands through their perceptions of brand image and their brand experiences (Chen-Yu, Cho, & Kincade, 2016). Higher satisfaction leads to stronger customer loyalty, profitability, and equity.

Attracting and retaining the most profitable customers is essential for success (Blattberg & Deighton, 1996). Consequently, it is more important for organizations to manage their customers for optimal retention than to manage their products for optimal performance. The changing world economy has caused businesses to need differentiated services where customer/provider relationships are most important for enhancing customer satisfaction. Sustainable marketing activities are believed to drive customer equity (Sun & Ko, 2016). The total perception of sustainability activities will then determine satisfaction regarding sustainability.

H8a. Customer satisfaction with sustainability positively influences value equity.

H8b. Customer satisfaction with sustainability positively influences brand equity.

H8c. Customer satisfaction with sustainability positively influences relationship equity.

Customer equity indicates that companies have built lifetime customer relationships over time. Driving customer lifetime value (CLV) are numbers of base transactions, repeat purchase frequency, extent of

cross-buying, value of word-of-mouth activities, and complaint management (Blattberg & Deighton, 1996). Complaint management is particularly important in managing customer relationships (Tax, Brown, & Chandrashekaran, 1998). The cost of implementation is measured by the amount of profits customers generate (Bayon, Gutsche, & Bauer, 2002). Companies that try to manage complaints should have higher customer equity. Complaint behavior potentially impacts other key marketing phenomena such as brand and store loyalty and repurchase intentions (Broadbridge & Marshall, 1995). If consumers believe their complaints will bring potential benefits that outweigh the costs, they are more likely to indicate intentions to complain; that is, perceived value positively influences complaint intentions (Kim, Gon Kim, & An, 2003) (Fig. 2).

H9a. Customer complaint negatively influences value equity.

H9b. Customer complaint negatively influences brand equity.

H9c. Customer complaint negatively influences relationship equity.

3.2. Measurements

3.2.1. Measurements of sustainable fashion index

The ACSI supplies the sustainable fashion index capturing attitudes towards the fashion industry including (1) overall satisfaction, (2) confirmation of expectations, and (3) the distance from the customer's hypothetical ideal product (Fornell, 1992). Table 1 shows the fashion index measurements regarding the four dimensions of sustainability and the measurement results driven by customer interest.

3.3. Sampling

To measure the sustainability of fashion companies, this study gathered data pertaining to customers who buy from Brand N, Brand C, Brand K, Brand BY, and Brand BP selling sustainable products and services. It was necessary to gather data from at least two or more fashion brands in the same category to analyze model suitability.

This study collected data twice in China and South Korea. In China, this study collected 606 (566 useful) questionnaires in department stores in Beijing, Shanghai, and Guangzhou. In South Korea, this study collected 288 useful questionnaires in Seoul and Busan. Table 2 shows demographic information.

This study designed the questionnaire to measure equity drivers and customer perceptions regarding sustainable performance. To interpret the four dimensions of economic performance, environmental performance, social performance, and cultural performance, this study needed customers of each of the five target brands.

4. Analysis and results

4.1. Measurement test

4.1.1. Reliability analysis and CFA

The reliability of the measurement was analyzed by Cronbach's α. Cronbach's α over 0.80 indicated a high degree of reliability, and based on the established benchmark (Kim, 1998) there was little correlation between attenuation. Table 3 shows that all Cronbach's α values were over 0.80 and demonstrated an adequate construct reliability data. This study used confirmatory factor analysis to measure the hypothesis of component concepts and the validity of measurement models. The mean score of each construct was calculated and used for further analysis.

Confirmatory factor analysis is used to measure the hypothetical relationship of component concepts and the validity of measurement models. The average score of each construct is calculated and used for further analysis. This study examined the validity of the measurement models based on the entire structure before this study analyzed the hypothetical relationships among component concepts. This study conducted a confirmatory factor analysis on measurement variables based on a matrix equation for covariance among structural factors.

The model fit index is shown below: subsequently, the verification on compatibility of the model was GFI = 0.912, NFI = 0.955, IFI = 0.971, TLI = 0.966, CFI = 0.971 and RSMEA = 0.049 with the fit of the research model higher than 0.9 in GFI, NFI, IFI, TLI, and CFI along with a RMSEA lower than 0.05. The evaluations indicated that the model had an acceptable fit.

4.2. Model test

This study examined the validity of the measurement models based on the entire structure before analyzed the hypothetical relationships among component concepts. This study conducted a confirmatory factor analysis on measurement variables based on a matrix equation for covariance among structural factors. Table 4 lists the model fit index; subsequently, the verification on compatibility of the model was GFI = 0.909, NFI = 0.953, IFI = 0.971, TLI = 0.967, CFI = 0.971 RSMEA = 0.050 with the fit of the research model higher than 0.9 in GFI, NFI, IFI, TLI, and CFI along with a RSMEA is 0.05. These evaluations indicated that model had an acceptable fit.

This study used structural equation modeling based on the research model to test the hypotheses. The two-step approach in structural equation modeling (Anderson & Gerbing, 1988) requires estimating the confirmatory measurement model before the simultaneous estimation of measurement and structure sub-models. The model was verified by standardized coefficients and other fitting statistical methods based on confirmative factor analysis results (Table 4 and Fig. 3).

Table 4 and Fig. 3 show the path results of the research model and hypotheses. The research model proposes some statistically significant paths: perceived quality of sustainability, customer expectations, and perceived value of sustainability positively influence satisfaction regarding sustainability of fashion products. Higher customer satisfaction regarding fashion product sustainability leads to higher customer equity and fewer customer complaints. Decreased customer complaints lead to increased customer equity.

The results indicate that consumers evaluate product quality and form repurchase intentions according to whether they perceive that the product is sustainable, which then increases customer equity, brand equity, and relationship equity, an important competitive advantage for fashion companies and brands. Satisfaction greatly impacts repurchase decisions. Dissatisfied customers tend to withdraw from the brand. This study demonstrates this inverse relationship by showing that customers are more satisfied when they perceive sustainable performance. Thus, they will be less likely to complain and will form stronger relationship equity and brand equity.

5. Conclusion

In this study, we examine sustainability in the fashion industry. We observe consumers' perceptions of quality and value according to four dimensions of sustainability: economy, environment, society, and culture. Perceptions of value and quality are essential when fashion consumers evaluate sustainable performance in fashion companies. Satisfaction with the sustainability brings greater customer equity to companies and brands through stronger customer relationships.

The ACSI is a general calculation of customer satisfaction with products, companies, industries, and countries according to various dimensions including CSR, eco-development, and sustainability.

The main contribution of the index is that it provides a new measurement system that calculates customers' perceptions of economic performance, environmental performance, social performance, and cultural performance. Those perceptions then determine their evaluations of the fashion industry's sustainable performance. The specific measurements reveal the eco-focus of customers, which can help

fashion industry practitioners design more effective and pertinent sustainability strategies.

This study tested and supported the new measurement system by revealing real customer expectations regarding sustainable fashion product attributes. The system allowed us to study how consumer satisfaction regarding sustainability of fashion products transfers to stronger brand equity. This study was also able to show the importance of sustainable development strategies in the fashion industry and to identify directions for the fashion industry to form sustainable, profitable, and competitive strategies. The study results indicate that fashion company managers should accurately calculate how customers perceive each sustainable behavior.

The calculation of index score based on the ACSI model and the development of measurement are suggested as future research themes based upon this study. Based on the index score, fashion companies can draft their detailed strategies on how to develop sustainability to influence profits. Our study is limited in that this study gathered data for only five fashion companies, which is insufficient for standardizing the index score. Future studies should extend to other fashion companies, types, markets, and culture to perfect the measurement system and grading criteria. Future researches should study a complete and more detailed sustainability evaluation system in fashion industry.

Acknowledgements

This work was supported by the National Research Foundation of Korea (NRF) grant funded by the Korea government (MSIP) (No. 2015R1A2A2A04005218).

References

Anderson, E. W., Fornell, C., & Lehmann, D. R. (1994). Customer satisfaction, market share, and profitability: Findings from Sweden. *The Journal of Marketing,* 53–66.

Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin, 103*(3), 411–423.

Bayon, T., Gutsche, J., & Bauer, H. (2002). Customer equity marketing: Touching the intangible. *European Management Journal, 20*(3), 213–222.

Berchicci, L., & Bodewes, W. (2005). Bridging environmental issues with new product development. *Business Strategy and the Environment, 14*(5), 272–285.

Blattberg, R. C., & Deighton, J. (1996). Manage marketing by the customer equity test. *Harvard Business Review, 74*(4), 136.

Bridges, C. M., & Wilhelm, W. B. (2008). Going beyond green: The “why and how” of integrating sustainability into the marketing curriculum. *Journal of Marketing Education, 30*(1), 33–46.

Broadbridge, A., & Marshall, J. (1995). Consumer complaint behaviour: The case of electrical goods. *International Journal of Retail & Distribution Management, 23*(9), 8–18.

Chan, T. Y., & Wong, C. W. (2012). The consumption side of sustainable fashion supply chain: Understanding fashion consumer eco-fashion consumption decision. *Journal of Fashion Marketing and Management, 16*(2), 193–215.

Chang, D. R., Jang, J., Lee, E. Y., Lee, H., & Chang, B. (2017). When a good company transgresses: A study of the influences of CSR, moral decoupling, and ethnocentrism. *Journal of Global Fashion Marketing, 8*(1), 40–53.

Chen, Y. S., & Chang, C. H. (2012). Enhance green purchase intentions: The roles of green perceived value, green perceived risk, and green trust. *Management Decision, 50*(3), 502–520.

Chen, Y. S., & Chang, C. H. (2013). Towards green trust: The influences of green perceived quality, green perceived risk, and green satisfaction. *Management Decision, 51*(1), 63–82.

Chen-Yu, J., Cho, S., & Kincade, D. (2016). Brand perception and brand repurchase intent in online apparel shopping: An examination of brand experience, image congruence, brand affect, and brand trust. *Journal of Global Fashion Marketing, 7*(1), 30–44.

Ciasullo, M. V., Cardinali, S., & Cosimato, S. (2017). A strenuous path for sustainable supply chains in the footwear industry: A business strategy issue. *Journal of Global Fashion Marketing, 8*(2), 143–162.

Dalziel, P., Matunga, H., & Saunders, C. (2006). Cultural well-being and local government: Lessons from New Zealand. *Australasian Journal of Regional Studies, 12*(3), 267.

van Dam, Y. K., & Apeldoorn, P. A. C. (1996). Sustainable marketing. *Journal of Macromarketing, 16*(2), 45–56.

Dekimpe, M. G., & Hanssens, D. M. (1999). Sustained spending and persistent response: A new look at long-term marketing profitability. *Journal of Marketing Research,* 397–412.

Dodds, W. B., Monroe, K. B., & Grewal, D. (1991). Effects of price, brand, and store information on buyers' product evaluations. *Journal of Marketing Research,* 307–319.

Fiksel, J., McDaniel, J., & Mendenhall, C. (1999, November). Measuring progress towards sustainability principles, process, and best practices. *Greening of industry network conference best practice proceedings. Vol. 19. Greening of industry network conference best practice proceedings* (pp. 2012–). . http://www.economics.com/images/SustainabilityMeasurementGIN.pdf (Accessed June).

Fitzgerald, M. P. (2017). Reflections on word-of-mouth effects on short-term and long-term product judgments. *Journal of Global Scholars of Marketing Science, 27*(3), 180–183.

Fletcher, K. (2007). Clothes that connect. In J. Chapman, & N. Gant (Eds.). *Designers, visionaries and other stories: A collection of sustainable design essays* (pp. 118–132). .

Fornell, C. (1992). A national customer satisfaction barometer: The Swedish experience. *The Journal of Marketing,* 6–21.

Fornell, C., Johnson, M. D., Anderson, E. W., Cha, J., & Bryant, B. E. (1996). The American customer satisfaction index: Nature, purpose, and findings. *The Journal of Marketing,* 7–18.

Fornell, C., & Wernerfelt, B. (1987). Defensive marketing strategy by customer complaint management: A theoretical analysis. *Journal of Marketing Research,* 337–346.

Ho, T. H., & Zheng, Y. S. (2004). Setting customer expectation in service delivery: An integrated marketing-operations perspective. *Management Science, 50*(4), 479–488.

Hofstede, G. (1984). Cultural dimensions in management and planning. *Asia Pacific Journal of Management, 1*(2), 81–99.

Howarth, G., & Hadfield, M. (2006). A sustainable product design model. *Materials & Design, 27*(10), 1128–1133.

Hunt, S. D. (2011). Sustainable marketing, equity, and economic growth: A resource-advantage, economic freedom approach. *Journal of the Academy of Marketing Science, 39*(1), 7–20.

Joergens, V. (2008). Binary frequency of very young brown dwarfs at separations smaller than 3 AU. *Astronomy & Astrophysics, 492*(2), 545–555.

Kim, H. B., Gon Kim, W., & An, J. A. (2003). The effect of consumer-based brand equity on firms' financial performance. *Journal of Consumer Marketing, 20*(4), 335–351.

Kim, K. H. (1998). An analysis of optimum number of response categories for Korean consumers. *Journal of Global Academy of Marketing Science, 1*(1), 61–86.

Knox, S., & Maklan, S. (2004). Corporate social responsibility: Moving beyond investment towards measuring outcomes. *European Management Journal, 22*(5), 508–516.

Kong, H. M., & Ko, E. (2017). Why do consumers choose sustainable fashion? A cross-cultural study of South Korean, Chinese, and Japanese consumers. *Journal of Global Fashion Marketing, 8*(3), 220–234.

Kong, H. M., Ko, E., Chae, H., & Mattila, P. (2016). Understanding fashion consumers' attitude and behavioral intention toward sustainable fashion products: Focus on sustainable knowledge sources and knowledge types. *Journal of Global Fashion Marketing, 7*(2), 103–119.

Kubacki, K., & Croft, R. (2004). Mass marketing, music, and morality. *Journal of Marketing Management, 20*(5–6), 577–590.

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

Mathur, T., Das, G., & Kanti Paul, U. (2016). Linking “satisfaction” to “intention-to-sell” and “sales performance” of individual agents in the health insurance market: Empirical evidence from India. *Journal of Global Scholars of Marketing Science, 26*(2), 109–128.

Mazanov, J., & Woolf, J. (2017). Corporate social responsibility and managing drugs in sport. *Journal of Global Sport Management, 2*(2), 96–110.

Monroe, K. B. (1973). Buyers' subjective perceptions of price. *Journal of Marketing Research,* 70–80.

Niinimäki, K. (2010). Eco-clothing, consumer identity and ideology. *Sustainable Development, 18*(3), 150–162.

Niinimäki, K., & Hassi, L. (2011). Emerging design strategies in sustainable production and consumption of textiles and clothing. *Journal of Cleaner Production, 19*(16), 1876–1883.

Pappu, R., Quester, P. G., & Cooksey, R. W. (2005). Consumer-based brand equity: Improving the measurement–empirical evidence. *Journal of Product and Brand Management, 14*(3), 143–154.

Pappu, R., Quester, P. G., & Cooksey, R. W. (2006). Consumer-based brand equity and country-of-origin relationships: Some empirical evidence. *European Journal of Marketing, 40*(5/6), 696–717.

Park, J. Y. (2017). Negative emotion and purchase behavior following social exclusion. *Journal of Global Scholars of Marketing Science, 27*(2), 111–122.

Peattie, K. (2001). Towards sustainability: The third age of green marketing. *The Marketing Review, 2*(2), 129–146.

Reichheld, F. F., & Sasser, W. E. (1990). Zero defections: Quality comes to services. *Harvard Business Review, 68*, 105–107.

Reiley, K., & DeLong, M. (2011). A consumer vision for sustainable fashion practice. *Fashion Practice, 3*(1), 63–83.

Rust, R. T., Moorman, C., & Dickson, P. R. (2002). Getting return on quality: Revenue expansion, cost reduction, or both? *Journal of Marketing, 66*(4), 7–24.

Sabah, S. (2017). The impact of self-construal and self-concept clarity on socially motivated consumption: The moderating role of materialism. *Journal of Global Scholars of Marketing Science, 27*(1), 31–45.

Savitz, A., & Weber, W. (2006). The triple bottom line: How today's best-run companies are achieving economic. *Social and environmental success*. San Francisco: Jossey-Bass.

Schaltegger, S., & Wagner, M. (2011). Sustainable entrepreneurship and sustainability innovation: Categories and interactions. *Business Strategy and the Environment, 20*(4), 222–237.

Spreitzer, G., & Porath, C. (2012). Creating sustainable performance. *Harvard Business Review, 90*(1), 92–99.

Stahel, W. R. (2001). Sustainability and services. In M. Charter, & U. Tischner (Eds.). *Sustainable solutions: Developing products and services for the future* (pp. 151–164). Sheffield: Greenleaf.

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

Székely, F., & Knirsch, M. (2005). Responsible leadership and corporate social responsibility: Metrics for sustainable performance. *European Management Journal, 23*(6), 628–647.

Tax, S. S., Brown, S. W., & Chandrashekaran, M. (1998). Customer evaluations of service complaint experiences: Implications for relationship marketing. *The Journal of Marketing,* 60–76.

United Nations World Commission on Environment and Development (1987). *Our common future.* Oxford: Oxford University Press.

Wang, H., Kim, K. H., Ko, E., & Liu, H. (2016). Relationship between service quality and customer equity in traditional markets. *Journal of Business Research, 69*(9), 3827–3834.

Wong, C. W., Lai, K. H., Shang, K. C., Lu, C. S., & Leung, T. K. P. (2012). Green operations and the moderating role of environmental management capability of suppliers on manufacturing firm performance. *International Journal of Production Economics, 140*(1), 283–294.

Yoo, B., & Donthu, N. (2001). Developing and validating a multidimensional consumer-based brand equity scale. *Journal of Business Research, 52*(1), 1–14.

Zeithaml, V. A. (1988). Consumer perceptions of price, quality, and value: A means-end model and synthesis of evidence. *The Journal of Marketing,* 2–22.