



Influence of sustainable hospitality supply chain management on customers' attitudes and behaviors

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ABSTRACT

This study aims to identify the impact of the environmental, social and economic dimensions of sustainable hospitality supply chain management actions on customers' attitudes and behaviors including satisfaction, loyalty and willingness to pay a premium for sustainable hospitality goods and services utilizing data collected from U.S. consumers who frequently stay at hotels. Findings suggest that while both environmental and economic dimensions' actions of sustainable hospitality supply chain management have positive influences on customer satisfaction, loyalty and willingness to pay a premium for sustainable hospitality goods and services, the social dimension actions are found to have a positive influence on customer satisfaction and a negative influence on customer willingness to pay a premium. Results also indicate that customer satisfaction fully mediates the relationship between social dimension actions and customer loyalty. In addition, customer satisfaction positively influences customer loyalty, which ultimately increases customer willingness to pay a premium. The implications of the research findings are provided.

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1. Introduction

Sustainability issues have been receiving an increasing attention from both practitioners and researchers in the hospitality industry in recent years (Berezan et al., 2013). One of the reasons for this increase is that an increasing number of travelers pay close attention to sustainability actions of companies (U.S. Travel Association, 2009) and hold positive attitudes toward companies implementing sustainability actions (Xu and Gursoy, 2015). Sustainability practices have become one of the most important factors influencing customers' perceptions and decision making process (Berezan et al., 2013). Studies suggest that sustainability practices have become significant determinants of customer loyalty and their willingness to pay a premium (Teng et al., 2012).

While several studies have examined the sustainability practices of hospitality companies and the impacts of those practices on travelers buying behaviors (Teng et al., 2012), most of the previous studies have only focused on a single dimension of sustainability

such as environmental aspect including environmental management and green practices (e.g., Rahman et al., 2012), or social aspect such as corporate social responsibility (e.g., Paek et al., 2013). Furthermore, most of the previous studies in hospitality have focused on sustainability efforts of hotels or restaurants. However, true sustainability cannot be achieved by the efforts of only hotels or restaurants; it requires a long-term collaboration among all stakeholders involved in a hospitality supply chain (HSC), which involves various suppliers and retailers of all hospitality goods, services, and customers to whom the goods and services are delivered (Xu and Gursoy, 2015). Therefore, a thorough understanding of the impacts of sustainability practices on travelers buying behavior requires an examination of sustainability practices of all supply chain members in environmental, social, and economic dimensions as suggested by the triple-bottom line framework. Furthermore, it is also important to examine the effects of the trade-offs companies have to make in the sustainability practices among three dimensions because of the resource limitations and the effects of virtues cycle that can be generated by sustainability practices in all three dimensions because of the positive interaction effects in the long run. Considering the fact that previous studies exploring sustainable supply chain management practices mainly focus on manufacturing sectors rather than the service sector (Xu and Gursoy, 2015), it is important to

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explore the sustainability issues and practices of hospitality supply chain members in all three dimensions because those companies sustainability practices in each dimension are likely to influence travelers decision making and buying behaviors.

As the triple bottom line reporting (3BL) approach indicate, sustainability collaboration among the organizations in a supply chain can ensure successful implementation of three objectives of sustainable development: environmental, social, and economic sustainability while improving customers positive perceptions and attitudes toward companies involved in the supply chain (Seuring et al., 2008). However, a comprehensive view of the influence of all three dimensions (including environmental, social, and economic dimensions) of sustainable supply chain management on customers' perceptions and attitudes has not received much attention from hospitality scholars. Therefore, this study attempts to examine the influences of hospitality businesses' sustainable supply chain management practices on customer satisfaction, loyalty and willingness to pay a premium for the goods and services provided by the members of a sustainable hospitality supply chain. This study specifically focuses on the impacts of environmental, social, and economic sustainability actions of a hospitality supply chain members on customer satisfaction, loyalty and willingness to pay a premium for their products and services.

The rest of the current study is organized as follows. Section 2 reviews the related literature. Section 3 introduces the research framework and develops the hypotheses. Methods in this study are explained in Section 4 and the results of data analysis are presented in Section 5. Findings of the study are discussed in Section 6. Implications are discussed in Section 7. Conclusions, limitations and further extensions are presented in the last section.

2. Literature review

2.1. Supply chain management in hospitality industry

Although studies of supply chain management are not rare, the examination of hospitality supply chains is burgeoning. While the hospitality supply chain was discussed in a broader framework of tourism supply chain management by Zhang et al. (2009) and Huang et al. (2012), the conceptual framework provided by Xu and Gursoy (2015) is among the first to discuss the hospitality supply chain management systematically. This study utilizes the conceptual framework developed by Xu and Gursoy (2015). Xu and Gursoy (2015) define a hospitality supply chain (HSC) "as a network of hospitality organizations engaged in different activities including the supply of various components of hospitality products and/or services such as raw food materials, equipment and furniture from various suppliers; distribution and marketing of the final hospitality products and/or services to the customers for a specific hospitality business such as a hotel or a restaurant." Hospitality supply chain delivers both products and services from initial suppliers to end users with a value incremental process (Kothari et al., 2005). It incorporates the characteristic of both manufacturing supply chain and service supply chain.

2.2. Sustainable hospitality supply chain management

Sustainable supply chain characteristics incorporate the concept of sustainability, which is defined as a development that meets the needs of contemporary generations without sacrificing the ability and opportunity of future generations to meet their needs (World Commission on Environment and Development, 1987), into supply chain (Ashby et al., 2012). As suggested by the triple bottom line reporting (3BL), sustainability actions have three dimensions.

The environmental sustainability dimension focuses on minimization of negative effects on environment caused by operations of a supply chain (Hassini et al., 2012). The social dimension refers to maximization of the social-welfare of related stakeholders in the supply chain such as employees, customers, suppliers and anyone else who is affected by the operations of the supply chain (Gopalakrishnan et al., 2012). The economic dimension focuses on generating and keeping long-terms of profits (Kleindorfer et al., 2005) while minimizing the negative environmental and social consequences.

Sustainable business practices of supply chain members can have positive impacts on survival and profitability of all members (Molina-Azorin et al., 2009). Studies suggest that sustainable business practices attract more consumers and enhance businesses' image and reputation (Han et al., 2011). Customers' attitudes and behaviors including satisfaction, loyalty and willingness to pay a premium are likely to be positively influenced by sustainable hospitality supply chain management actions and efforts because customers are being more conscious about businesses' reputation and their products and services' environment-friendly and socially responsible features (Cronin et al., 2011). Therefore, it is important for companies to be part of a supply chain that focuses on sustainable practices in environmental, social and economic areas as recommended in the triple bottom line approach.

3. Research framework and hypotheses development

3.1. The influence of sustainable hospitality supply chain management on customer satisfaction

Customer satisfaction can be defined as an evaluation resulting from the cognitive processes corresponding to a comparison between customers' experience and their initial reference base (Aurier and Evrard, 1998). This study explores customers' overall satisfaction as in the previous studies (e.g., Kim et al., 2009; Caber et al., 2013; Lee et al., 2014). Studies suggest that the environmental dimension of sustainable hospitality supply chain management is likely to have positive influences on customer satisfaction (Berezan et al., 2013) because environmental conscious businesses would address both the economic and social interfaces within the natural environment and, therefore, be considered as a more balanced and complete organizations. The environment-friendly actions taken by a business could be seen as an integral part of a service offer and therefore, increases customers' overall satisfaction (Berezan et al., 2013). More specifically, since the hospitality industry is an energy-intensive, natural resource consuming, and waste generating in great quantities type of industry, it has always been under pressure from environmentalists and other grassroots organizations to become more environmental friendly (Cetinel and Yolal, 2009). This pressure resulted in the adoption of certain environment-friendly initiatives in order to reduce hospitality industry's "environmental footprint," which proved to be an effective way of increasing customer satisfaction (Prud'homme and Raymond, 2013). Studies further suggest that customer tend to be more satisfied with companies that are engaged in relatively more environmental-friendly practices in the service delivery process compared to other companies (Gao and Mattila, 2014). Therefore, hotels' green practices are likely to have a significant impact on guests' satisfaction (Berezan et al., 2013).

In addition, the social dimension of sustainable hospitality supply chain management can also have positive influences on customer satisfaction. The socially responsible actions toward both internal and external stakeholders can enhance customer satisfaction. On the internal stakeholder side, customers nowadays are paying more attention to employees' welfare and working

conditions (Costen and Salazar, 2011). Growing consumer backlash against companies because of the working conditions of employees is a clear indication of this trend (Knorringer, 2009). Companies that aim to be more socially responsible develop public corporate codes that describe employees working conditions, which integrate sustainability principles into various processes in a supply chain and ensure employees' acceptance and participation (Brown, 2007).

Enhancing employees' health and safety and offering trainings to them would not only increase the employees' job satisfaction but also enhance the level of customer satisfaction (de Leaniz and Rodríguez, 2015). Previous studies report a direct positive relationship between customer satisfaction and employee satisfaction (e.g., Chi and Gursoy, 2009). This positive relationship is even stronger in industries where the frequency of customer and employee interaction is relatively high like the hospitality industry (Kassinis and Soteriou, 2003).

On the external stakeholder side, customer satisfaction can also be improved by businesses' socially responsible actions (Miles and Covin, 2000). Businesses' long-term relationships with channel partners in the supply chain can enhance its sustainability (Closs et al., 2011). The collaboration with suppliers can lead to less raw material consumption and waste associated with extending product life (Guide et al., 2003). These actions can positively influence customers' preferences for a company's products and their perceptions toward the business reputation (Creyer and Ross, 1997). Local community oriented business practices can also enhance customers' satisfaction since customers strongly prefer local products (Holmes and Yan, 2012). Furthermore, not only directly, but also indirectly, the social dimension actions may also influence hospitality customers' satisfaction through enhanced reputation, brand image, and firm performance (Lee and Heo, 2009). When hospitality service failures occur, socially responsible actions can help mitigate the negative effects of internal causes of attribution on customer identification and improve the post-recovery satisfaction (Siu et al., 2014).

The economic dimension of sustainable hospitality supply chain management also plays an important role on customers' satisfaction. Customers usually consider businesses with good financial performance as offering high quality products and services, which enhances their satisfaction (Lo et al., 2015). Businesses with good financial performances have the capabilities to operate efficiently, offer better and high quality products and services, which are considered as key determinants of customer satisfaction (Sanchez-Fernandez and Iniesta-Bonillo, 2009). In addition, businesses with good financial performance are able attract capital through investors, and through lowering over-investment, lower under-investment, or both (Biddel et al., 2009). Good financial performance contributes a firm's ability to offer and deliver high quality products and services (Assaf et al., 2012; Loureiro and Kastenholz, 2011;) and, therefore, increase customer satisfaction (Jung and Yoon, 2013).

As the preceding discussion suggest, the environmental, social and economic dimensions of sustainable hospitality supply chain management actions can generate higher level of customer satisfaction. Therefore, the following hypothesis is proposed:

Hypothesis 1. The environmental (P1-a), social (P1-b) and economic (P1-c) dimensions of sustainable hospitality supply chain management have significant positive impact on customer satisfaction.

3.2. *The influence of sustainable hospitality supply chain management on customer loyalty*

Customer loyalty can be defined as behavioral measures expressed over time or repurchase habits (Bloemer and Kasper,

1995). It is the customers' overall attachment or deep commitment to the business related elements such as product, service, brand or the company (Oliver, 1999).

The environmental dimension of sustainable hospitality supply chain management positively affects customer loyalty (Lee et al., 2010). In the hospitality context, green actions can enhance customer loyalty through a strong green image of hospitality businesses and other businesses involved in the supply chain (Kassinis and Soteriou, 2003). Many hospitality businesses have been developing green positioning strategies in recent years (Lee et al., 2010) in order to secure top market positions (Hotelier, 2007). Green management of hospitality businesses and supply chains can also cultivate customer loyalty, shown by more visit intentions, through improving its reputation and differentiating its brand (Han et al., 2011; Jang et al., 2015).

In addition, the social dimension of sustainable hospitality supply chain management also has a positive influence on customer loyalty. The socially responsible actions toward internal and external stakeholders can increase customer loyalty. On the internal stakeholder side, socially responsible actions toward enhancing employees' welfare can positively impact employees' loyalty, which in turn creates more customer satisfaction and loyalty (Chi and Gursoy, 2009). On the external stakeholder side, promotion of a company's social responsibility efforts and relationship management are likely to increase its reputation as a socially responsible company and likely to result in higher customer loyalty (Nikolaeva and Bicho, 2011). For example, community relationship management can significantly improve attractiveness of an organization and customer loyalty toward that organization (Luce et al., 2001). Businesses utilizing partnerships with sustainability minded suppliers strengthen their organizational image of being sustainable and, therefore, create stronger brand loyalty among customers (Hunt and Morgan, 1995). The social dimension, reflected by corporate social responsibility (CSR), has become a critical construct in hospitality industry because of its influence on consumer loyalty (Martinez and Bosque, 2013). Furthermore, the influence of economic dimension of sustainable hospitality supply chain management on customer loyalty cannot be ignored. Companies that try to optimize profits and long-term success from its activities always try to develop strategies to attract new customers and convert existing customers into loyal customers (Salmones et al., 2005). Sustainability efforts with financial goals are more likely to be viewed as genuine by both internal and external stakeholders (Hunt and Morgan, 1995). Hospitality companies' good financial performance can enable them to offer better services and higher quality products, which can improve customer loyalty (Shi et al., 2014). The enhanced value perception can enable companies to reap corresponding outcomes such as good reputation and overall image (Miles and Covin, 2000). Hospitality companies with good reputation can generate higher level of customer loyalty (Pena et al., 2013). The overall image of a business is determined by customers' cognition and would positively influence the degree of repeat patronage and customer loyalty (Hirschman, 1981). Hospitality companies' good financial performance can also provide more benefits to employees and raise their satisfaction, which indirectly increases customer satisfaction (Jung and Yoon, 2013). Therefore, a company's economic status may influence customer loyalty directly. Based on the preceding discussion, this study proposes the following hypothesis:

Hypothesis 2. The environmental (P2-a), social (P2-b) and economic (P2-c) dimensions of sustainable hospitality supply chain management have significant positive impact on customer loyalty.

3.3. *The influence of sustainable hospitality supply chain management on customer willingness to pay*

Studies report that many customers are willing to pay a premium for green products or services (Yoo and Kwak, 2009). In hospitality context, previous studies report that tourists are willing to pay more to support environmental sustainability (e.g., Masau and Prideaux, 2003). Many consumers are aware that their buying habits may be harmful to the environment and, sometimes, these environmental concerns translate into ecologically favorable behaviors, shown by eco-friendly purchasing decisions (Chen and Tung, 2014). Some hospitality consumers search for and are willing to pay a premium for eco-friendly products (Lee et al., 2010). The social identity (Tajfel and Turner, 1986) and the means-end theories (Gutman, 1982) provide foundations for the reasons of this positive relationship between hospitality guests' environmental concerns and their willingness to pay more for green products and services (Kang et al., 2012). The social identity theory suggest that people with higher level of environmental concerns are more likely to associate themselves with companies that have clear environmental policies and practices. Because of this association, those customers are willing to pay a premium for products and services offered by those companies (Han et al., 2011). The means-end theory reveals that environmentally conscious customers are willing to pay more for green products or services since the green products or services have distinguishable attributes which can satisfy their expectation of value and self-esteem (Kang et al., 2012). In addition, hospitality businesses' green actions are likely to improve their overall image and, therefore, customers' willingness to pay more (Han and Hsu, 2009). Studies suggest that, guests of luxury and mid-priced hotels are more willing to pay premiums for hotels' environmental actions than guests of economy hotels (Kang et al., 2012). Similarly, restaurant customers indicate that they are willing to pay about 10% or higher than the menu prices at restaurants that adopt green practices according to Dutta et al. (2008)'s study.

In addition, the effect of the social dimension of sustainable hospitality supply chain management on customers' willingness to pay is also positive. Businesses' corporate social responsibility actions improve customers' purchase intentions (Samu and Wymer, 2009) and their willingness to pay premium prices since the product provides the broadest spectrum of value to customers (Pelozo and Shang, 2011).

The socially responsible actions of sustainable supply chain toward internal and external stakeholders can also motivate customers to pay extra. A large number of customers claim to be more willing to buy products from companies involved in social causes (Salmones et al., 2005). On the internal stakeholder side, customers are willing to pay a premium for better professional services that are provided by well-trained employees (Bechwati, 2011). Hospitality companies corporate social responsibility practices can increase employees' organizational trust, job satisfaction, and customer orientation (Lee et al., 2013), which helps the employees provide better service quality, and thus stimulate customers' willingness to pay a premium for the service. On the external stakeholder side, local-community oriented businesses purchase and sell local products and services, which enhances companies' image within the community. Since customers are willing to support local communities such as small family farms (Onozaka and Mcfadden, 2011), they are more likely to pay extra for local products and services.

Furthermore, the positive influence of the economic dimension of sustainable hospitality supply chain management on customers' willingness to pay a premium is also significant. The improved products and services provided by hospitality companies with good financial performance are more likely to be higher quality than products and services provided by companies that are struggling.

This is likely to increase customers' willingness to pay extra since these high quality products and services are likely to exceed customers' expectations and increase the value customers assign to the consumption experiences in monetary units (Campbell et al., 2014). Based on the preceding discussion, this study proposes the following hypothesis:

Hypothesis 3. The environmental (P3-a), social (P3-b) and economic (P3-c) dimensions of sustainable hospitality supply chain management have significant positive impact on customer willingness to pay a premium.

Environmental, social and economic dimensions of the sustainable hospitality supply chain management can motivate customers to pay a premium. The motivation mechanism can be either directly as discussed above or indirectly through the mediation effect of customer satisfaction and customer loyalty. Previous studies find that customer satisfaction has a significant positive influence on customers' spending (e.g., Fornell et al., 2010). The price customers are willing to pay increases as customer satisfaction increases (Homburg et al., 2005). Previous studies also report similar relationships between customer loyalty and willingness to pay more. Loyal customers are usually willing to pay more than other customers since they prefer the product or service over others (Jensen and Drozdenko, 2008).

3.4. *The influence of customer satisfaction on customer loyalty*

Numerous previous studies report that customer satisfaction is the antecedent of loyalty (Gursoy et al., 2014). This positive link also commonly exists in the hospitality context (Nunkoo et al., 2013b). For example, the positive influence of customer satisfaction on customer loyalty is evident in repeat hotel stays. Studies argue that increased satisfaction by hotels' corporate reputation and perceived quality positively affects tourists' loyalty (Loureiro and Kastenholz, 2011). The positive link between customers' satisfaction with hotels and their loyalty has been solid and strong in the last several decades, no matter what the economic circumstance is (Kim et al., 2013). Based on the preceding discussion, this study proposes the following hypothesis:

Hypothesis 4. Customer satisfaction has a significant positive impact on customer loyalty.

3.5. *The influence of customer loyalty on customer willingness to pay*

Loyal customers are usually willing to pay more than other customers since they prefer the product or service over others (Jensen and Drozdenko, 2008). In the hospitality context, studies have found that loyal customers express significantly higher brand preferences for airlines and hotels and are willing to pay a premium when facing purchase choices (Mathies and Gudergan, 2012). When customers become loyal, they are likely to buy more, pay more, and recommend more (Gursoy et al., 2014). Based on the preceding discussion, this study proposes the following hypothesis:

Hypothesis 5. Customer loyalty has significant positive impact on customers' willingness to pay.

4. Methods

4.1. Measures

A three-step procedure was used to develop the survey instrument. First, the measurement scales were developed based on the sub-dimensions reported in the Xu and Gursoy's (2015) conceptual framework of sustainable hospitality supply chain management

for each sustainability dimension. Second, the instrument including each measurement scale was pre-tested on a sample of college students. Third, based on the pre-test results, the instrument was revised and finalized. The finalized questionnaire included five sections.

The first three sections included items to measure customers' attitudes toward hospitality supply chain members' sustainability actions related to environmental, social, and economic dimension of sustainable management. The proxy term "hotels and their suppliers" was used in the survey to represent the concept of "supply chain" due to the fact that some of the respondent may not know what supply chain means. Customers' perceptions of hotels and their suppliers' actions in each sub-dimension (environmental, social and economic) were measured by several items adopted from the previous studies. Items that are used to measure customers' perceptions of hospitality supply chain members environmental sustainability efforts included questions related to product design (Baker, 2009; Enz and Siguaw, 1999; Goodman, 2000), service process design (Font et al., 2008; Kassinis and Soteriou, 2003), product management during use (Enz and Siguaw, 1999; Goodman, 2000), product life extension (Goodman, 2000; Schendler, 2001), recycling (Font et al., 2008; Kasim et al., 2014), pollution control (Enz and Siguaw, 1999), environment management systems (Farsari, 2012; Goodman, 2000; Kasim et al., 2014; Schwartz et al., 2008). Items that measured customers' perceptions of hospitality supply chain members' social sustainability efforts included questions related to employees (Enz and Siguaw, 1999; Goodman, 2000; Schwartz et al., 2008), customers (Kasim et al., 2014; Kassinis and Soteriou, 2003; Schwartz et al., 2008), communities (Enz and Siguaw, 1999; Goodman, 2000; Schwartz et al., 2008), suppliers (Goodman, 2000), and governments (Font et al., 2008). Items that measured economic sustainability actions included questions related to revenue growth (Enz and Siguaw, 1999; Font et al., 2008), cost control (Goodman, 2000; Goodman, 2000); and market share growth (Kleindorfer et al., 2005; Schwartz et al., 2008). This study only focused on the financial aspect of the economic dimension of sustainable supply chain management in hospitality industry because of the conceptual framework used. The triple bottom line approach mainly focuses on the financial issues in the economic dimension. Therefore, this study reports the financial aspect of the economic dimension, which is consistent with the reporting of previous studies (e.g., Assaf et al., 2012). The fourth section included items to measure customers' overall satisfaction (Caber et al., 2013; Gursoy et al., 2015), loyalty (Chi, 2011) and willingness to pay a premium. Each item in the first 4 sections were measured on a 5-point Likert-type scale (1 = strongly disagree, 5 = strongly agree). The last section included socio-demographic questions.

4.2. Data collection and sample

A pilot test was conducted among college students from a university located in the Northwestern United States. A total of 350 initial questionnaires were distributed to undergraduate students and 210 completed questionnaires were collected, obtaining a 60% response rate. An exploratory factor analysis (EFA) with Varimax rotation method was conducted on the pilot test data. Items with low item-to-total correlation values were excluded from analysis. Items that load on more than one construct were eliminated to achieve unidimensionality. Afterwards the survey instrument was finalized.

Data were collected from an online panel of U.S. consumers who frequently stay at hotels. A link to the survey with an introduction and objective of the study was provided to the panel members. To make sure that only U.S. residents participated in the study, an IP restriction was placed. Only the individuals with IP addresses in the U.S. were allowed to participate in the survey. Two screening

questions were used to identify the most appropriate respondents for the study. First, the respondents were asked if they have stayed at a hotel within the last 6 months. Respondents who answered "yes" to the first questions were then asked the state the total number of nights stayed at hotels within the last six months. Only those who answered "10 or more nights" were allowed to proceed, while those who did not qualify were redirected to the thank you message and excluded from the survey. Furthermore, multiple validation check questions were included to ensure the accuracy and trustworthiness of the responses. Responses that missed one or more validation check questions were completely deleted. A total of 807 respondents completed the survey. After the validation check, a total of 499 valid responses were retained and subjected to statistical analysis.

4.3. Data analysis

A two-step structural equation modeling approach with maximum likelihood (ML) estimation was employed to examine the proposed hypotheses utilizing the 499 valid responses. The reason why the maximum likelihood (ML) estimation was used is that because structural equation modeling (SEM) methods usually use iterative estimation methods. The most common method is the Maximum Likelihood Estimation (ML) because this iterative method involves repeated attempts to obtain estimates of parameters that result in the "best fit" of the model to the data, and therefore makes the data analysis section more accurate. First, a confirmatory factor analysis (CFA) was performed to assess the measurement properties (e.g., construct validity, reliability and unidimensionality). After confirming a desirable measurement model, the interrelationships between proposed constructs were examined by constructing a structural model.

5. Results

5.1. Profile of respondents

Table 1 presents the characteristics of respondents. As Table 1 shows, there were slightly more female respondents (54.3%) than male respondents (45.7%). Most respondents were in the age brackets of 26–34 (39.1%) and 35–54 (30.5%). About 44% of the respondents in the current sample were married and 40% were single. Most of the respondents had a bachelor's or graduate degree (56.5%), followed by college/technical school (25.1%). Most of the respondents had managerial, professional, and related positions (30.1%).

5.2. Measurement model

First, a confirmatory measurement model that specifies the posited relations of the observed variables to the underlying constructs, with the construct allowed to intercorrelate freely was tested (Nunkoo et al., 2013a). The measurement properties generated from CFA are presented in Table 2. The model fit indices of CFA are as follows: $\chi^2 = 938.19$, ($df = 335$; $p < 0.001$), RMSEA = 0.066, CFI = 0.98, NFI = 0.97, NNFI = 0.98, IFI = 0.98, RFI = 0.97. Overall, the data fit the measurement model fairly well. The average variance extracted (AVE) values were calculated for each construct. All AVE values exceeded 0.50 except for Economic Dimension of Hospitality Sustainable Supply Chain Management (0.49). Discriminant validity was assessed by comparing AVE scores with squared correlation between the constructs. All the correlations in the measurement model were less than 0.85, indicating desirable discriminant validity. In addition, construct reliability was calculated for each latent

Table 1
Characteristics of respondents.

Variable	Range	Percentage	Variable	Range	Percentage
Gender	Female	54.3	Marital status	Single	39.7
	Male	45.7		Married	43.7
Age	Under 13	0.0	Occupation	Liver together	10.0
	13–17	0.0		Divorced	5.4
	18–25	21.6		Widowed	1.2
	26–34	39.1		Management, professional, and related	30.1
	35–54	30.5		Service	14.2
	55–64	6.6		Sales and office	10.8
	65 or above	2.2		Farming, fishing, and forestry	1.0
Highest school degree obtained	Less than high school	1.2	Construction, extraction, and maintenance	2.8	
	High school graduate/G.E.D	10.0	Production, transportation, and material moving	2.4	
	Associated degree/Corticated	7.2	Government	5.4	
	Some college or technical school	25.1	Retired	2.8	
	Bachelor's degree	35.1	Unemployed	8.8	
	Gradate work	6.8	Other	21.6	
	Master degree	12.2			
	Ph.D. degree	2.4			
	Other	0.0			

Table 2
Properties of measurement model.

Construct	Items	Standardized factor loading	AVE	Construct reliability
Environmental dimension of hospitality sustainable supply chain management	Product design: purchasing greener products	0.71	0.55	0.89
	Service process design: greener service process	0.75		
	Product management during use	0.74		
	Product life extension	0.83		
	Recycling	0.68		
	Pollution control	0.68		
	Environment management systems	0.79		
Social dimension of hospitality sustainable supply chain management	Employees	0.77	0.52	0.83
	Customers	0.80		
	Community	0.55		
	Suppliers	0.80		
	Government	0.64		
Economic dimension of hospitality sustainable supply chain management	Revenue growth	0.80	0.49	0.72
	Cost control	0.55		
	Market share growth	0.72		
Customer satisfaction	I am interested in staying at this type of hotel	0.85	0.61	0.92
	I will be very happy if I can stay at this type of hotel	0.84		
	I will be very satisfied if a hotel can provide such level of service	0.81		
	My choice to stay in the hotel will be a wise one	0.85		
	I think it would be the right thing to stay at this type hotel	0.84		
	I will recommend this type of hotel to my friends, relatives or colleagues	0.87		
	I will spread positive recommendations of this type of hotel to others	0.87		
Customer loyalty	I will stay at this type of hotel whenever possible	0.86	0.75	0.92
	I will encourage others to go to this type of hotel	0.87		
	I am willing to pay a premium to stay at this type of hotel	0.92		
	I am happy to pay more to stay at this type of hotel	0.91		
	Most of my friends, family or relatives would be willing to pay a premium to stay at this type of hotel	0.75		
Customer willingness to pay	I will pay extra to stay at this type of hotel	0.87	0.75	0.92

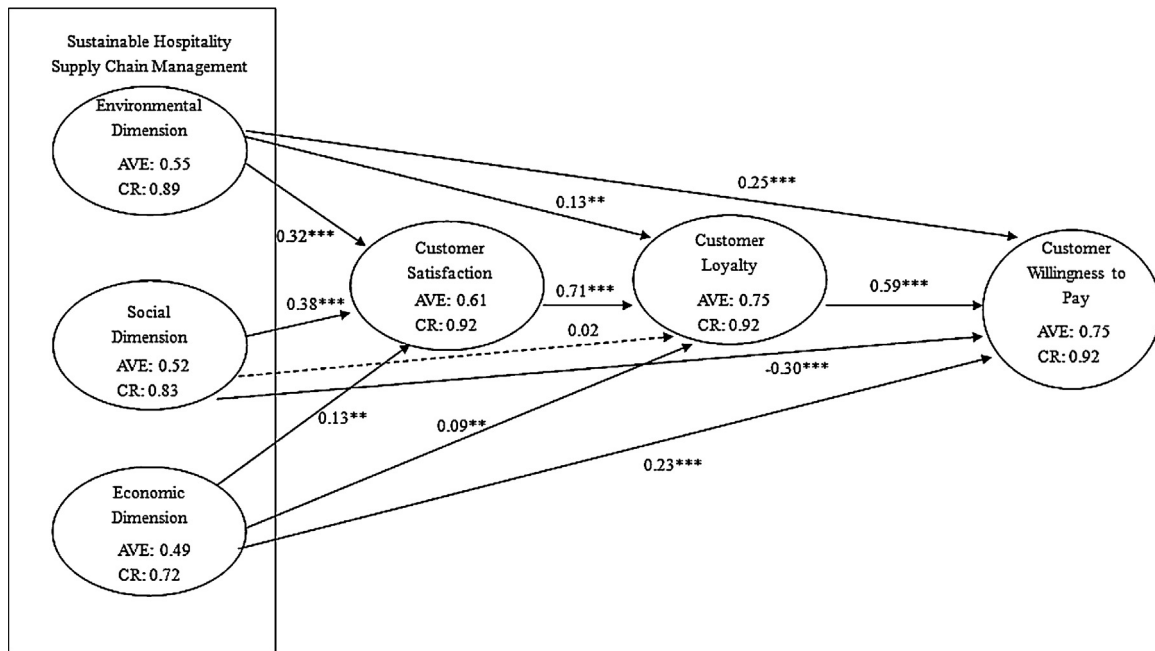


Fig. 1. Structural model with standardized path coefficients; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; CR: construct reliability.

variable and the scores ranged from 0.72 to 0.92, exceeding the ideal cutting off value of 0.70.

5.3. Structural model and hypotheses

Given the desirable measurement properties, the interrelationships among the constructs were examined using a structural model utilizing a covariance matrix. The standardized path coefficients for proposed relationships are presented in Fig. 1. The structural model produced the following goodness-of-fit indices: $\chi^2 = 940.18$, ($df = 336$; $p < 0.01$), $RMSEA = 0.066$, $CFI = 0.98$, $NFI = 0.97$, $NNFI = 0.98$, $IFI = 0.98$; $RFI = 0.97$. The goodness-of-fit indices suggest that the proposed structural model fits the data reasonably well.

Table 3 provides a summary of the results of hypotheses testing. Hypothesis 1 posited a positive relationship between the sustainable hospitality supply chain management and customer satisfaction. As presented in Fig. 1, the paths between the environmental, social, and economic dimension actions and customer satisfaction are significant and positive ($\beta_{1a} = 0.32$, $p < 0.001$; $\beta_{1b} = 0.38$, $p < 0.001$; $\beta_{1c} = 0.13$, $p < 0.01$), indicating that consumers are likely to be satisfied if hotels and their suppliers implement sustainable hospitality supply chain management practices. Therefore, hypotheses 1a, 1b, and 1c are supported. However, although paths between the environmental and economic dimension actions and customer loyalty are significant and positive ($\beta_{2a} = 0.13$, $p < 0.01$; $\beta_{2c} = 0.09$, $p < 0.01$), the path between social dimension actions and customer loyalty is not significant ($\beta_{2b} = 0.02$, $p = 0.37$). Therefore, hypotheses 2a and 2c are supported, while hypothesis 2b is rejected. Similarly, the result indicate that the relationship between environmental and economic dimension actions and customer willingness to pay a premium are significant and positive ($\beta_{3a} = 0.25$, $p < 0.001$; $\beta_{3c} = 0.23$, $p < 0.001$), while the path between social dimension actions and customer willingness to pay a premium is significantly negative ($\beta_{3b} = -0.30$, $p < 0.001$), indicating that consumers would like to pay less if hotels and their suppliers implement social dimension actions of sustainable hospitality supply chain management. Therefore, hypotheses 3a and 3c are supported, while hypothesis 3b is rejected. Lastly,

a direct positive relationship between customer satisfaction and loyalty, and a direct positive relationship between customer loyalty and willingness to pay a premium are identified ($\beta_4 = 0.71$, $p < 0.001$; $\beta_5 = 0.59$, $p < 0.001$), which provides support for hypotheses 4 and 5.

Overall, the results indicate that customer satisfaction can increase loyalty and then ultimately enhance customer willingness to pay a premium for sustainable goods and services. The environmental and economic dimension actions enhance customer satisfaction, loyalty and willingness to pay a premium, while social dimension actions only enhance customer satisfaction directly. Because of the insignificant relationship identified between social dimension actions and customer loyalty, researchers suspect that satisfaction may mediate the relationship between social dimension actions and customer loyalty. As a result, a mediation test is conducted. Findings suggest that the relationship between social dimension actions and customer loyalty is fully mediated by customer satisfaction (the relationship is significant with $\beta = 0.32$, $p < 0.001$ without satisfaction and loyalty link).

6. Discussions

This study examines the impacts of three dimensions of sustainability on customers' attitudes and behaviors. Findings of this study contribute to the knowledge in the field in three different areas. First, the results confirm previous studies findings that hospitality business' environmental-friendly actions enhance customer satisfaction (Berezan et al., 2013), loyalty (Su and Wei, 2011), and willingness to pay a premium for sustainable goods and services (Han and Hsu, 2009). Second, findings suggest that the social dimension actions of sustainable hospitality supply chain management increase customer satisfaction, which is consistent with the findings of previous studies (e.g., Lee and Heo, 2009). However, this study finds that customer satisfaction fully mediates the positive relationship between social dimension actions and customer loyalty. While the results confirm the findings of previous empirical studies that customer satisfaction may be one of the antecedents of loyalty (Chaudhuri and Holbrook, 2001), this study also finds that the social dimension actions enhance customer loyalty mainly

Table 3
Summary of hypotheses and path coefficients.

Hypotheses	Standardized path coefficients	Result
Hypotheses 1a: Environmental dimension of SHSCM → satisfaction	0.32**	Supported
Hypotheses 1b: Social dimension of SHSCM → satisfaction	0.38**	Supported
Hypotheses 1c: Economic dimension of SHSCM → satisfaction	0.13*	Supported
Hypotheses 2a: Environmental dimension of SHSCM → loyalty	0.13*	Supported
Hypotheses 2b: Social dimension of SHSCM → loyalty	0.02	Rejected
Hypotheses 2c: Economic dimension of SHSCM → loyalty	0.09*	Supported
Hypotheses 3a: Environmental dimension of SHSCM → willingness to pay	0.25**	Supported
Hypotheses 3b: Social dimension of SHSCM → willingness to pay	−0.30**	Rejected
Hypotheses 3c: Economic dimension of SHSCM → willingness to pay	0.23**	Supported
Hypotheses 4: Satisfaction → loyalty	0.71**	Supported
Hypotheses 5: Loyalty → willingness to pay	0.59**	Supported

* $p < 0.01$.

** $p < 0.001$; SHSCM: Sustainable hospitality supply chain management.

through enhanced satisfaction, which contradicts findings of some of the previous studies that demonstrate a direct positive relationship between corporate social responsibility and customer loyalty (e.g., Perez et al., 2012). However, this finding is consistent with the findings of other studies that suggest the positive influence of corporate social responsibility on customer loyalty may not be direct, instead, it may be mediated by other constructs such as customer trust (Martinez and Bosque, 2013), perceived service quality (Mandhachitara and Poolthong, 2011) and customer satisfaction as in the case of this study.

A little surprisingly, our results indicate a significantly negative influence of social dimension actions on customer willingness to pay a premium for sustainable goods and services. Previous studies claim that the findings regarding customer willingness to pay a premium for corporate social responsibility actions are highly variable and this issue warrants further research (Parsa et al., 2015). Before discussing the possible reasons, it is important to acknowledge the fact that corporate social responsibility may have various definitions and measuring corporate social responsibility remains a challenging task (Morimoto et al., 2005). A general consensus as to what actions should be included in corporate social responsibility has not emerged (Servaes and Tamayo, 2013). Different measurements may yield different performance of corporate social responsibility and its influence on customers' perception (Font et al., 2012). In most of the previous studies (e.g., Martinez and Bosque, 2013; Lee and Heo, 2009), companies' environmental-friendly actions are incorporated into corporate social responsibility actions. Some of the previous studies even included economic dimension, along with legal, ethical, and discretionary actions in corporate social responsibility (e.g., Carroll, 1999). These may explain the positive significant influence of corporate social responsibility actions on customer willingness to pay a premium reported in previous studies, which is similar to the conclusions of this study that environmental and economic dimension actions have positive significant influences on customer willingness to pay a premium for sustainable goods and services. However, in the current study, the social dimension actions only include the actions taken toward enhancing the welfare of internal and external stakeholders as indicated in the triple bottom line approach (Assaf et al., 2012) and it is consistent with Servaes and Tamayo (2013)'s study. This is also consistent with Kucukusta et al.'s (2013) study of corporate social responsibility's dimensions of workforce, community, and policy and their conclusion that the corporate social responsibility actions are not likely to have any significant impact on customer's willingness to pay a premium.

The significant negative influence of social dimension actions on customer willingness to pay a premium might be due to several reasons. First, the social dimension actions include only the actions taken toward enhancing the welfare of internal and external stakeholders (Assaf et al., 2012; Servaes and Tamayo, 2013).

These actions may not have direct significant impact on customer's willingness to pay a premium because they may not be visible to consumers. This is consistent with the findings of previous studies conclusions that customers' awareness of the extent to which hospitality companies engage in socially responsible activities is very low (Parsa et al., 2015). Thus, customers' lack of awareness about hospitality companies' corporate social responsibility initiatives and hospitality companies' unwillingness to invest in social responsibility actions may lead to this negative influence.

Furthermore, customers may be willing to pay a premium if they consider the company's actions as value adding actions that can bring benefits or returns to them (Tarfasa and Brouwer, 2013). However, in this study, the social dimension actions focus more on enhancing the welfare of employees, communities, suppliers and governments, instead of only customers, through providing extra benefits, establishing long-term relationship and so on. Customers may be willing to pay a premium for the hospitality companies' products and services that specifically meet their needs (Parsa et al., 2015). However, hospitality companies' social responsible actions may not offer direct benefits to customers. Only those customers who are actively involved in social responsibility practices may be willing to pay more (Parsa et al., 2015). Although companies may need to make significant investments in the social dimension actions, they may not be able to charge a premium (Scarpa et al., 2008). This may partly explain the reasons why companies may be unwilling to make significant investment in the social dimension actions of sustainable hospitality supply chain management, as most of these actions are imposed by government regulations or legal compliance instead of voluntary actions (Buckley, 2012).

Customers often face a trade-off between their desire for lower-priced products and their moral desires such as paying a premium to contribute companies' socially responsible actions (Hess et al., 2002). This trade-off is also often related to the trade-off between customer economic self-enhancement and altruistic socially responsible behavior (Lichtenstein et al., 2004). The corporate social responsibility actions tend to be more strategic and more often related to corporate practices, compared with environmental friendly and financial actions, which are more operational (Kucukusta et al., 2013). Hospitality companies' customers are more concerned about operational than corporate practices, as operational practices are more likely to affect service delivery and therefore the overall experience (Kucukusta et al., 2013). This may explain the reasons why the environmental and economic dimension actions may have significant impact on customers' willingness to pay a premium for products and services received while the social dimension actions may have a negative impact. Customers may be unwilling to pay a premium because of hospitality companies' contributions to external stakeholders' relationships since these do not likely to have a direct impact on their experiences (Kucukusta et al., 2013). Although some studies report a posi-

tive relationship between hospitality companies' corporate social responsibility's actions and the companies' performance, this is mainly because of customers' loyalty to the company (Servaes and Tamayo, 2013). However, as suggested by the findings of this study, investments in social dimensions actions are likely to have direct impact on customers' satisfaction and indirect impact on their loyalty behavior and, therefore, on their willingness to pay a premium.

The third contribution of this study is that it finds significant positive relationships between the economic dimension actions and customers' perceptions. While the examination of hospitality companies' economic dimension actions and their influences on customer perceptions are rare, in recent years, it has been receiving an increasing attention from both practitioners and researchers (Buckley, 2012). Findings clearly suggest hospitality companies and their suppliers' financial performance is likely to have significant impact on customer satisfaction, loyalty and willingness to pay a premium. Findings of this study also confirm the significantly positive influence of customer satisfaction on customer loyalty and the significantly positive influence of customer loyalty on customer willingness to pay a premium as suggested by previous studies (e.g., Martinez and Bosque, 2013,b; Nunkoo et al., 2013a).

7. Implications

7.1. Theoretical implications

One of the main theoretical contributions of this study is that it discusses the whole hospitality supply chain's sustainability actions instead of individual companies' sustainability actions. The results clearly show that hospitality companies and their suppliers' sustainability actions have a strong influence on customers' perceptions. This study also provides a comprehensive view of customer's perceptions toward each dimension actions of sustainable hospitality supply chain management. Previous studies mainly focus on a single dimension of sustainable actions, either through environmental-friendly perspective or the perspective of corporate social responsibility. By discussing all of the environmental, social, and economic dimensions using the triple bottom line theory, this study identifies and compares the influences of each of the three dimensions on customers' perceptions.

This study finds that both the environmental and economic dimensions have positive influences on customer satisfaction, loyalty and willingness to pay a premium. It confirms previous studies' findings about the positive impact of hotels' green actions on customer satisfaction (Berezan et al., 2013; Prud'homme and Raymond, 2013) and customer loyalty (Jang et al., 2015; Lee et al., 2010). However, this study is one of the first to examine the impact of economic dimension on customers' attitudes and behaviors. Findings suggest that hospitality companies and their suppliers' satisfactory financial performance, which may include high revenue growth and market share growth, and powerful cost control mechanism, are likely to have a strong positive influence on customer satisfaction, loyalty and willingness to pay a premium. In other words, customers care much about hospitality companies and their suppliers' operating and profitability efficiency since it enables companies to provide high quality services and products and, therefore, enhance their image and reputation (Graham and Bansal, 2007). The good financial status of businesses can attract both customers and investors (Assaf et al., 2012), which can lead them to provide more diversified and higher quality products and services. Thus, although hospitality companies and their suppliers' economic status may be an external factor, it may still influence customers' attitudes and behaviors (Steenkamp and Baumgartner, 1992).

In addition, this study finds that the social dimension of sustainable hospitality supply chain management positively influence only customer satisfaction directly. Customer satisfaction is found to have a full mediating effect between hospitality business' social dimension actions and customer loyalty.

7.2. Managerial implications

Findings suggest that all sustainability actions of a supply chain can enhance customers' satisfaction, which can lead to higher customer loyalty, and ultimately higher customers' willingness to pay a premium. Therefore, among other strategies such as enhancing product and service quality, hospitality businesses should implement sustainable hospitality supply chain management in order to improve customers' satisfaction, and to enhance company's performance.

Findings suggest that actions related to each dimension of sustainable hospitality supply chain are not likely to have the same effect on customer satisfaction, loyalty and their willingness to pay a premium. Therefore, hospitality businesses may need to prioritize the sustainability actions based on their expected impacts on customer future intentions and behaviors. Businesses may need to invest more resources in its environmental-friendly actions and try to enhance its financial performance through improving the efficiency of their operating mechanism since these can have significant impact on customer satisfaction, loyalty, and willingness to pay a premium, and therefore, enhance businesses financial performance (Sun and Kim, 2013). Thus, a virtue circle can be formed for hospitality businesses to improve positive customer perceptions and companies' performance even further. The virtue circle can also be formed through other mechanisms. For example, hospitality business with good financial performance can enhance customer perceptions and their willingness to pay a premium and, as a result, those companies may end up having more capabilities to implement more environmental-friendly actions (Singal, 2014), which is likely to improve customer perceptions even further.

When implementing social dimension actions, hospitality businesses can try to provide value-added benefits to customers. For example, during the hiring process, companies can develop strategies to recruit local talents who will deliver outstanding service to customers. Also, providing ongoing training to employees can improve the quality of service delivery process (Kim et al., 2015), which can ultimately increase customer loyalty and willingness to pay a premium (Tarfasa and Brouwer, 2013). Another good example of social dimension actions is to develop strategies to support local communities. For example, they can try to purchase organic food from local farmers whenever possible and communicate it to their customers. This may improve customers' perceptions about the company. Companies can also integrate local culture and customs into their design of facilities and service deliver process. These actions are likely to enable hospitality companies to deliver more authentic service experiences that are likely to be considered as value-added benefits by customers and, therefore, enhance their willingness to pay a premium for that experience (Scarpa et al., 2008).

Even though sustainability actions are likely to generate significant benefits for hospitality companies, some of these sustainability actions are implemented because of the regulatory enforcement. Hospitality business should realize that although taking any sustainability action may be considered costly for supply chain operations in the short term, in the long run, companies are likely to benefit from sustainability practices in the supply chain operations because these practices can lead to better performance for hospitality business through enhanced customer satisfaction, loyalty and willingness to pay a premium. In the long term, sustainability

actions are likely to generate both internal benefits for the hospitality companies and external benefits for the whole society.

Sustainability practices integrated into the whole supply chain can generate significantly more positive effects compared with the effects obtained from sustainability actions implemented by only an individual business such as an individual hotel (Ashby et al., 2012). Sustainability actions such as green products and services design should be implemented from the upstream of the supply chain (upstream suppliers). This can make the sustainability process lasts during the whole operations (Wang et al., 2013). This approach can bring a significant competitive advantage for the whole supply chain and, therefore, benefits all of the stakeholders in the supply chain. Long-term partnership and information sharing may be among the more efficient ways to coordinate stakeholders and maximize the profits for the whole supply chain. Cooperation is a must in achieving sustainability goals. It is crucial that all businesses in the supply chain understand the importance of profit maximization for the whole hospitality supply chain rather than an individual business' profit maximization for the success of sustainability initiatives.

8. Conclusions and further extensions

This study provides a comprehensive view of the impact of hospitality businesses' actions related to each dimension of sustainable hospitality supply chain management on customers' perceptions. While both the environmental and economic dimensions actions of sustainable hospitality supply chain management have positive influences on customer satisfaction, loyalty and willingness to pay a premium; the social dimension action is found to have a positive influence on customer satisfaction and a negative influence on customer willingness to pay a premium. Findings also suggest that customer satisfaction fully mediates the relationship between social dimension actions and customer loyalty.

Although this study makes significant contributions to theory and practice, it is not free of limitations. This study does not differentiate the potential differences of customers' perceptions toward different types of hospitality businesses that implement sustainable hospitality supply chain management. Different types of businesses, which can be categorized by stars, locations, ownerships, may have varying practices of sustainability practices (Han et al., 2011) and may have different impact on customer perception. In addition, various demographic characteristics of customers may moderate the influence of these impacts. Future studies can explore the potential moderating effects of customer characteristics and business type between the relationship of hospitality business' sustainable hospitality supply chain management and customer perception.

Although sustainable hospitality supply chain management can bring tremendous benefits to hospitality businesses, the costs cannot be ignored. This study mainly discusses its positive influences, but does not provide an optimal solution of how many actions should be taken by the members of a sustainable hospitality supply chain management considering the tradeoff between its benefits and operational costs. Theoretical modeling, which is a typical method in operations management context, could be used with the objective function as maximizing businesses' profits or customers' perceptions.

The antecedents or motivations of hospitality businesses sustainable supply chain management practices should be further explored in future studies. Future studies should also explore the perceptions of other stakeholders such as managers and employees toward sustainable hospitality supply chain management. A study that compares other stakeholders' perceptions to customer perceptions may yield interesting implications. Furthermore, sustainable

hospitality supply chain management can be discussed under a broader framework such as sustainable tourism and other stakeholders such as travel agents, tour operators and destination may be included. However, this approach will make the influence of sustainable hospitality supply chain management be more complicated and many other factors may need to be considered with the objective of maximizing demand or company's long-term profits.

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