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Consumer perceptions towards sustainable supply chain practices in the hospitality industry

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ABSTRACT

This study investigates the impacts of economic, social and environmental sustainability practices of companies in the hospitality supply chain on consumers' satisfaction, loyalty and willingness to pay higher prices. Utilizing data collected from 288 tourists visiting south Sardinia, the study indicates that while economic sustainability practices have positive impacts on consumers' satisfaction, loyalty and willingness to pay a premium, sustainability practices related to environmental and social dimensions have a direct positive impact on satisfaction and an indirect positive impact on consumer loyalty and willingness to pay a premium. Additionally, findings reveal that satisfaction is likely to mediate the impact of environmental and social sustainability practices on the loyalty of consumers. The theoretical and managerial implications of the study are provided.

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Sustainability; supply chain practices; hospitality; consumer perceptions; Sardinia

Introduction

In recent years, the concept of sustainability has gained currency among practitioners in the hospitality industry. The reason for the increased popularity of sustainability in hospitality is two-fold. First, sustainability in hospitality has become a significant determinant influencing consumer perceptions and decision-making aspects such as the loyalty of consumers and the willingness of consumers to pay exceptional prices (Teng, Horng, Hu, Chien, & Shen, 2012). Second, the significance of sustainability within the tourism and hospitality industries has been increasingly emphasized by governments and community organizations that place pressures on companies to align their practices to sustainability principles (Xu & Gursoy, 2015a). The hospitality industry, in particular, has been acknowledged as a key supplier of the tourism product with a significant contribution to destinations' economies which, nonetheless, imposes pressures on the environment and the host community (de Grosbois, 2012). The increased popularity of sustainability issues in hospitality is reflected by a proliferation of studies focusing on the antecedents, impacts, actions and evaluation mechanisms of sustainability practices (e.g. Berezan, Raab, Yoo, & Love, 2013; Chen, 2015; Kang, Stein, Heo, & Lee, 2012). These studies are insightful and informative about the influence of sustainability on consumer perceptions, attitudes and behaviour.

Nonetheless, a foray into extant literature identifies a one-dimensional focus of past studies. For instance, most studies have centred investigation on of sustainability, focusing either on the

environmental aspect such as green practices (e.g. Namkung & Jang, 2017) or on the social aspect including corporate social responsibility (e.g. Martinez & del Bosque, 2013). Additionally, most previous studies concentrated on a single sector of the hospitality industry such as hotels or restaurants, overlooking the importance of the involvement of all the stakeholders of the hospitality supply chain in sustainability (Lo, King, & Mackenzie, 2017; Shin, Im, Jung, & Severt, 2017). As Xu and Gursoy (2015a, p. 229) stated 'true sustainability can be achieved only if all members of a supply chain participate in sustainability practices'. In a conceptual framework developed by Xu and Gursoy (2015a), the supply chain is acknowledged as possessing specific characteristics that emanate from both manufacturing and service supply chains. According to the authors, the effective management of the supply chain requires the adherence to environmental, social and economic aspects as indicated by the triple bottom line approach (Hall, Matos, & Silvestre, 2012), which became known as representing the three objectives of sustainable development. Insofar, there has been limited academic attention devoted to the influence of all three sustainability dimensions in relation to the management of hospitality supply chain practices.

While research has been performed on the impact of sustainable hospitality supply chain practices on consumer behavioural aspects, past studies evaluating customer perceptions and attitudes towards sustainable practices in hospitality have focused on specific sustainability dimensions (i.e. environmental) or on consumers from specific geographical region (Chin, Chin, & Wong, 2018; Xu & Gursoy, 2015b). For example, Xu and Gursoy (2015b) examined impacts of environmental, social and economic dimensions of sustainable hospitality supply chain management practices on American travellers' attitudes and behaviours including satisfaction, loyalty and willingness to pay a premium for sustainable hospitality goods and services. Their results indicated that both environmental and economic dimensions' practices have positive impacts on American consumers' satisfaction, loyalty and willingness to pay a premium for sustainable hospitality goods and services, the social dimension practices were found to have positive impact on satisfaction and a negative impacts on willingness to pay a premium. They also reported satisfaction to fully mediate the relationship between social dimension practices and loyalty. However, Xu and Gursoy (2015b) indicated that their findings may not be applicable to consumers outside the United States because American consumers tend to exhibit significantly different attitudes and behaviours towards green products compared consumers located in other geographical regions of the world. For example, studies suggest that European consumers are 50% more likely than American consumers to purchase environmentally friendly sustainable products (Thompson, 2007). Thus, it is critical to examine perceptions and attitudes of consumers located in different geographical regions towards sustainable practices in hospitality. Therefore, this study aims to advance our knowledge of the impact of sustainability practices on consumers' attitudes and behaviours by focusing on European travellers' hotel selection process. Specifically, this study examines the influence of sustainability practices of companies in the hospitality supply chain related to environmental, social and economic dimensions of sustainability on the behavioural aspects of customer satisfaction, loyalty and willingness to pay a premium price, which emerge as most predominant in the extant literature.

The rest of the paper is organized as follows. First, a review of the literature is provided in order to establish the theoretical background of the study and contribute to the development of hypotheses. The importance of sustainability in the hospitality supply chain is explained before an overview of past studies evaluating the impacts of sustainable supply chain management practices on consumer perceptions is provided. Then, the methodology adopted in this study is described. Following, the results of the data analysis are presented before the implications, limitations and future research directions are drawn together as conclusions.

Literature review

Sustainability in hospitality supply chain management

Extant literature on supply chain management identifies two predominant forms of supply chains: manufacturing and service supply chains. The first refers to a process whereby units are transformed

from raw materials into products and sold to end-consumers whereas the latter is defined as the inbound and outbound service experiences offered to consumers by firms (Miles & Snow, 2007). The hospitality supply chain possesses elements of both manufacturing and service supply chains. Specifically, it has been defined by Xu and Gursoy (2015a, p. 232)

as a network of hospitality organisations 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 consumers for a specific hospitality business such as a hotel or a restaurant.

Therefore, the management of the supply chain in hospitality extends beyond procurement and logistics and differs from a traditional supply chain along six features. First, hospitality products are perishable with the variable cost of the hospitality product often being lower than fixed costs (Guo, Ling, Yang, Li, & Liang, 2013); hence, revenue management is important for hospitality suppliers. Second, the generation of consumer demand is crucial in hospitality, particularly in relation to positive word-of-mouth (Cantallops & Salvi, 2014). Third, there are various suppliers providing the hospitality product with the hospitality supply chain being characterized as a close-loop one (Xu & Gursoy, 2015a). Fourth, demand for hospitality products is uncertain due to intense competition among hospitality companies and the industry's susceptibility to external factors such as the weather (Zhang, Song, & Huang, 2009). Fifth, the simultaneous production and consumption of the hospitality product problematizes logistics. Last, collaboration among hospitality business is crucial as multiple hospitality products provided by various companies are offered to consumers as a package.

In recent years, arguments concerning the importance of aligning the hospitality supply chain to sustainability principles have intensified. Driven by the realization that all members of the supply chain need to participate in sustainability efforts, researchers in hospitality advocate the implementation of sustainability practices from the upstream of the supply chain, highlighting the importance of supplier selection and cooperation (e.g. Xu & Gursoy, 2015a). Studies on traditional supply chains indicate the consideration of environmental, social and economic aspects as imperative in effective supply chain management (Hall et al., 2012). Likewise, Xu and Gursoy (2015a) identified the triple bottom line approach to sustainability as critical in hospitality for the successful implementation of sustainable development objectives, namely economic, social and environmental sustainability. In other words, hospitality suppliers need to ensure that the negative impacts on the environment resulting from their actions are minimized, that their operations enhance the social welfare of related stakeholder such as employees, consumers and other suppliers and that profit is generated long-term. A range of benefits has been identified as emanating from the sustainable practices of hospitality supply chain members. For instance, company image may be enhanced (Han, Hsu, Lee, & Sheu, 2011) whilst the profitability of all supply chain members may be improved (Molina-Azorin, Claver-Cortes, Lopez-Gamero, & Tari, 2009). In evaluating the positive impacts of the sustainable supply chain, an important array of work has emerged discussing the influence of sustainability practices on consumer behavioural aspects. Specifically, satisfaction, loyalty and willingness to pay an exceptional price emerge as the most predominant variables examined in relation to consumer perceptions and attitudes towards sustainability practices. Previous studies confirm the positive influence of sustainable hospitality supply chain practices on consumer perceptions and behaviours, as consumers are becoming increasingly conscious over the environmental-friendly and responsible aspects of products and services (Cronin, Smith, Gleim, Martinez, & Ramirez, 2011).

Supply management and consumer perceptions

The majority of studies looking into the impact of sustainable supply chain practices on consumer perceptions focused on the relationship between the three dimensions of sustainability and consumer satisfaction. Defined as 'a person's feeling of pleasure or disappointment which resulted from

comparing a product's perceived performance or outcome against his/ her expectations' (Kotler & Keller, 2006, p. 144), satisfaction has been widely examined in hospitality studies (Cicerali, Kaya Cicerali, & Saldamli, 2017). Generally speaking, consumer satisfaction is an indication of company success in providing products and services efficiently and in creating value for consumers. Management literature indicates that high consumer satisfaction translates into higher profits, larger market share, repeat purchase, positive word-of-mouth and enhanced company reputation (e.g. McDougall & Levesque, 2000). In relation to the hospitality product, which exhibits specific characteristics in comparison to traditional products, consumer satisfaction has been acknowledged as being highly important for company profitability. Recently, as the importance of sustainability for hospitality consumers increased, academic attention has shifted towards the relationship between sustainability practices and consumer satisfaction as evidenced by a burgeoning number of studies examining the contributory role of sustainability actions on consumer satisfaction.

Specifically, several studies have examined the impacts of the three dimensions of sustainability on consumer satisfaction. However, most of those studies have focused on the examination of the relationship between a single dimension of sustainability and satisfaction. Representing an energy-intensive and waste generating industry, the hospitality sector has been under pressure from environmental groups and non-profit organizations to minimize its negative environmental impacts. Likewise, the increased consciousness of consumers led many hospitality businesses to adopt environmental-friendly practices in an attempt to reduce their environmental footprint. Thus, in relation to the environmental dimension, it has been found that consumer satisfaction is positively impacted by environmental-friendly actions of hospitality companies (Berezan et al., 2013; Lu & Stepchenkova, 2012; Slevitch, Mathe, Karpova, & Scott-Halsell, 2013). Specifically, Gao and Mattila (2014) found that consumer satisfaction increased when companies were engaged with environmental-friendly practices. Similarly, Yu, Li, and Jai (2017) argued that hotels' green practices contribute to consumer satisfaction whereas Graci and Kuehnel (2011) established a positive relationship between green practices of hotels and reduced operating costs. Indeed, consumer satisfaction was found to mediate between environmental practices and companies' financial performance (Kassinis & Soteriou, 2003). Interestingly, in evaluating the impact of economic sustainability on consumer satisfaction, studies found that good financial performance acts as an antecedent of high satisfaction (Jung & Yoon, 2013; Lo, Wu, & Tsai, 2015). The financial performance of companies is an indication of their capability to offer high quality services, which is a determinant of consumer satisfaction (Sanchez-Fernandez & Iniesta-Bonillo, 2009). Lastly, the social dimension of sustainability has been examined in relation to consumer satisfaction with studies concurring the positive relationship between the two variables. For example, socially responsible companies have been found to offer better working conditions (Brown, 2007), thereby increasing employee satisfaction (Chi & Gursoy, 2009) and consequently consumer satisfaction as employees are likely to perform more efficiently at work (de Leaniz & Rodriguez, 2015). The impact of employee satisfaction on performance is particularly significant in the hospitality industry in which there is a close interaction between employees and consumers (Kassinis & Soteriou, 2003). Likewise, companies' socially responsible actions may contribute to company reputation and brand image (Lee & Heo, 2009) through the selection of environmental-friendly suppliers (Guide, Jayaraman, & Linton, 2003) and the cooperation with local suppliers (Holmes & Yan, 2012). Given these arguments, we develop the following hypothesis:

H₁: There is a positive relationship between (a) environmental, (b) social and (c) economic dimensions of the supply chain and consumer satisfaction.

Studies examining the impact of the three dimensions of sustainability on consumer loyalty can also be found. Consumer loyalty has been defined as the strength of the relationship between one's relative attitude and repeats purchase (Dick and Basu, 1994; Rather, 2018). Representing the attachment consumers place on products, brands and/or companies, consumer loyalty is an important construct within hospitality as it can indicate future behavioural intentions, trust and

consumer identification with the company (Martinez & del Bosque, 2013; Sipe & Testa, 2018). Unsurprisingly, many hospitality companies offer reward schemes and loyalty programmes in an attempt to enhance consumer loyalty and increase consumer satisfaction (Liu and Mattila, 2016). Within hospitality, the environmental dimension of sustainability has been found to contribute to the enhancement of consumer loyalty (Chen, 2015; Lee, Hsu(Jane), Han, & Kim, 2010). As an increasing number of consumers demand green actions from hospitality companies, environmental-friendly activities can improve company reputation (Jang, Kim, & Lee, 2015) and ultimately influence the loyalty of the consumers positively. Likewise, the social actions of hospitality companies may increase consumer loyalty. For instance, employee welfare schemes can enhance the attractiveness of a company and contribute to brand loyalty (Chi & Gursoy, 2009). Similarly, economic sustainability plays an important role in enhancing consumer loyalty. Shi, Prentice, and He (2014) argued that good financial performance improves the quality of products and hence contributes to consumer loyalty. Equally, good financial performance of hospitality companies strengthens company reputation and may help generate consumer loyalty (Pena, Jamilena, & Molina, 2013) whereas as Jung and Yoon (2013) argued the financial performance of hospitality companies may enhance consumer loyalty indirectly by contributing to consumer and employee satisfaction. Therefore, we propose that:

H₂: There is a positive relationship between (a) environmental, (b) social and (c) economic dimensions of the sustainable supply chain and consumer loyalty.

Lastly, several studies examining the impact of sustainability practices on consumers' willingness to pay higher prices have been conducted. Generally, the ecological concerns of consumers in hospitality have been argued to increase willingness to pay for environmental-friendly company initiatives (Chen & Tung, 2014; Kang et al., 2012; Lee et al., 2010), with Han et al. (2011) suggesting that consumers engage with companies that have environmental-friendly policies. Kang et al. (2012) concluded that consumers of luxury hotels and mid-priced hotels exhibit greater willingness to pay higher prices for environmental-friendly practices than consumers of economy hotels whereas, in the context of restaurants, Namkung and Jang (2017) confirmed consumer willingness to pay premium prices for green practices. In respect to social sustainability, it was found that consumers are prepared to pay premium prices for well-trained employees and for locally produced goods (Bechwati, 2011; Onozaka & Mcfadden, 2011). Furthermore, the socially responsible actions of companies can enhance employee productivity and satisfaction (Lee, Song, Lee, Lee, & Bernhard, 2013) as well as support local communities through the cooperation with local suppliers, thereby increase consumer willingness to pay a premium. Economic sustainability should also not be ignored within the scope of consumer eagerness to pay an exceptional price. Previous research indicates that consumers are more eager to pay higher prices for the services of companies with successful performance (Campbell, DiPietro, & Remar, 2014; Fornell, Rust, & Dekimpe, 2010). Higher willingness to pay premium prices for the products of companies with good financial performance results from higher satisfaction and higher perceptions of product quality, which are associated with the economic profitability of businesses. Thus, informed by the literature we propose the hypothesis:

H₃: There is a positive relationship between (a) environmental, (b) social and (c) economic dimensions of the supply chain and consumer willingness to pay higher prices.

Interestingly, the variables of consumer satisfaction, loyalty and willingness to pay have been found to be interrelated. For instance, Nunkoo, Gursoy, and Ramkissoon (2013) established a positive relationship between consumer satisfaction and loyalty whereas Gursoy, Chen, G, and Chi (2014) argued that consumer satisfaction is an antecedent of consumer loyalty. Kim, Cha, Singh, and Knutson (2013) confirmed the positive link between the two constructs while Loureiro and Kastenholz (2011) identify perceived quality's mediating effect between consumer satisfaction and loyalty. Likewise, loyal consumers were found to be more willing to pay higher prices

(Gursoy et al., 2014; Jensen & Drozdenko, 2008). Taking into account these findings, this study proposes that:

H₄: There is a positive relationship between consumer satisfaction and consumer loyalty.

H₅: There is a positive relationship between consumer loyalty and consumers' willingness to pay higher prices.

Methodology

Questionnaire

The hypotheses presented in the previous section were tested utilizing data collected through a self-administered questionnaire, developed by Xu and Gursoy's (2015a). Five sections were included in the questionnaire. In the first three sections, several items measuring the consumers' perceptions of the sustainability practices of hospitality supply chain members, hereby referred to as Sustainable Hospitality Supply Chain Management (SHSCM). Consistent with Xu and Gursoy's (2015a) definition, the hospitality supply chain (HSC) in the survey was defined

as a network of hospitality organisations 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

In particular, the first section focused on the environmental sustainability dimension. This section included 33 items that measured attention to product design, service process design, reuse and recycling, management of products during service delivery, waste and pollution management and expansion of products' life cycle among other factors. The second section contained 36 items measuring the social sustainability dimension related to employees, consumers, communities, suppliers and the government. The third section with 19 items analysed economic sustainability practices (e.g. cost control, income growth, and expansion of market share). The fourth section contained several items measuring consumers' behaviours and intentions such as satisfaction, loyalty and willingness to pay a premium price. Items in the first four sections of the questionnaire were measured on a 5-point Likert scale, ranging from 1 (completely disagree) to 5 (completely agree). Questions aimed to measure respondents' socio-demographic were included in the fifth section.

Sample and data collection

The sample included tourists visiting south Sardinia between May 2017 and September 2017. The respondents were selected in accordance to quota random sampling based on their nationality. A total of 327 questionnaires were completed by tourists. After eliminating responses with missing data, 288 questionnaires were retained for data analysis. Table 1 shows the socio-demographic profile of respondents. Overall, 51.1% of the samples were female whereas the majority of respondents (80.7%) were under 54 years old. Approximately, 36.5% of the respondents were Italian, 18.8% were British, 19.4% were French and 19.8% were German. Almost 40% of the respondents were married while those being single represented 37.2% of the sample. Around 44% of the respondents worked in managerial, professional and similar positions whereas the median annual income was about 49,000 euros.

Data analysis

To test the model and hypothesized relationships, structural equation modelling was conducted. In a first step, a confirmatory factor analysis (CFA) was conducted to test the construct validity, reliability and unidimensionality properties of the measurement model. Afterwards, interrelationships among the variables were estimated with the structural equation modelling. The *lavaan* package under

Table 1. Profile of Respondents.

Variable	Range	%	Variable	Range	%
Gender	Male	48.9	Marital status	Single	37.2
	Female	51.1		Married	39.4
Age	Under 13	0.0	Occupation	Live together	16.7
	14–17	1.1		Divorced	4.3
	18–25	13.7		Widowed	2.5
	26–34	26.1		Management. professional and related occupation	43.8
	35–54	39.8		Service	7.6
	55–64	12.3		Sales and Office occupations	21.9
Education	65 or above	7.0	Income	Production. transportation and material moving	3.1
	Less than high school	2.4		Retired	7.6
	High school	25.0		Unemployed	10.7
	Certificate	8.3		Other	5.4
	College/technical school	11.1		Low (under 30,000 euros)	21.7
	Bachelor's degree	17.0		Medium (from 30,001 to 60,000 Euros)	44.6
	Graduate work	3.1		High (Over 60,001 Euros)	33.7
	Master's degree	29.2			
	Ph.D.	1.0			
	Other	1.7			
Nationality	Italian	36.5			
	British	18.8			
	French	19.4			
	German	19.8			
	Other	5.6			

software R 3.4.0 was utilized for all estimations (Rosseel, 2012). The proposed model and the hypotheses are presented in Figure 1.

Results

Measurement model

A two-step approach was utilized to estimate the measurement and structural models. First, the measurement model was estimated using the Maximum Likelihood Estimation method. Model fit was evaluated using the Goodness of Fit Index (GFI), Root Mean Square Error of Approximations (RMSEA), and the χ^2 and relative/normed chi-square (χ^2/df) statistics (Wheaton, Muthen, Alwin, & Summers, 1977). Given that the fit indices of CFA are $\chi^2 = 1370.022$, ($df = 513$; $p < .0001$),

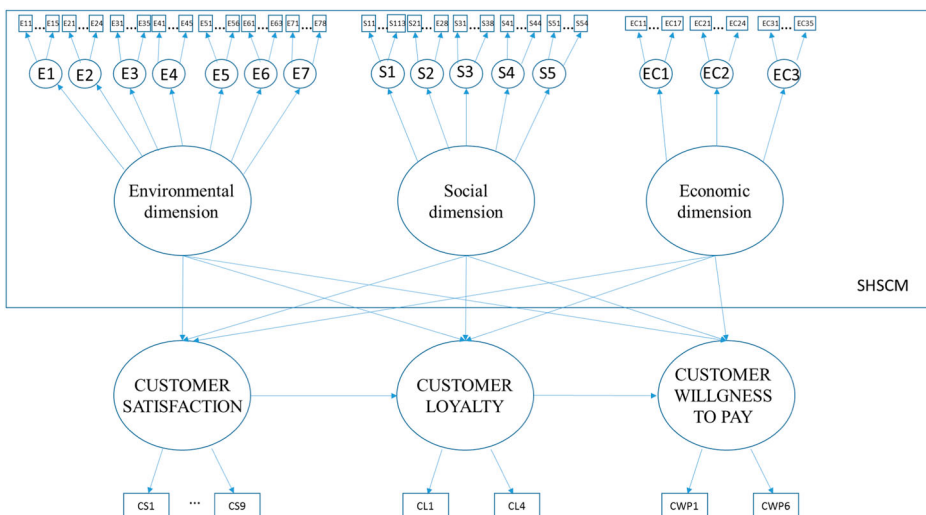


Figure 1. Consumer attitudes towards sustainable supply chain practices in the hospitality industry.

$\frac{\chi^2}{df} = 2.67$, GFI = 0.942 and RMSEA = 0.076, we concluded that the data fit the measurement model fairly well.

Table 2 reports the properties of the measurement model.¹ As reported in Table 2, all AVE values exceeded the ideal cutting off value of 0.50. Thus, the convergent validity of the constructs was established.

Next, squared correlations among the constructs were estimated (Table 3) and then compared to the AVE scores. Given that, all correlations between the constructs were less than 0.85 (Lee et al., 2013), the model discriminant validity was established. Furthermore, composite reliability scores of the constructs examined in this study varied from 0.752 to 0.978, exceeding the established cut-off value of 0.70 (Hair, Ringle, & Sarstedt, 2011) indicated that the items utilized to measure each construct had acceptable reliability.

Testing the proposed model and hypotheses

After confirming that the measurement model was acceptable, the second step of the analysis examined the interrelationships among the constructs utilizing a structural modelling approach. The

Table 2. Results of the confirmatory factor analysis.

Construct	Code	Standardized factor loadings	AVE	Construct reliability
SHSCM: Environmental dimension	E1	0.814	0.672	0.934
	E2	0.804		
	E3	0.841		
	E4			
	E5	0.793		
	E6	0.850		
	E7	0.780		
	E8	0.847		
SHSCM: Social dimension	S1	0.796	0.650	0.902
	S2	0.823		
	S3	0.803		
	S4	0.844		
	S5	0.760		
SHSCM: Economic dimension	EC1	0.753	0.512	0.752
	EC2	0.534		
	EC3	0.810		
Customer Satisfaction	CS1	0.814	0.690	0.952
	CS2	0.845		
	CS3	0.865		
	CS4	0.807		
	CS5	0.856		
	CS6	0.814		
	CS7	0.875		
	CS8	0.853		
	CS9	0.739		
Customer Loyalty	CL1	0.859	0.747	0.936
	CL2	0.890		
	CL3	0.860		
	CL4	0.879		
Customer Willingness To Pay	CWP1	0.832	0.712	0.925
	CWP2	0.855		
	CWP3	0.749		
	CWP4	0.778		
	CWP5	0.919		
	CWP6	0.903		

Table 3. The matrix of the correlations among the constructs.

	Environmental dimension	Social dimension	Economical dimension	Satisfaction	Loyalty	Willingness to pay
Environmental dimension	1.000					
Social dimension	0.734	1.000				
Economical dimension	0.365	0.517	1.000			
Satisfaction	0.612	0.642	0.358	1.000		
Loyalty	0.560	0.534	0.393	0.829	1.000	
Willingness to pay	0.487	0.412	0.390	0.605	0.707	1.000

indices of goodness-of-fit of the estimated structural model ($\chi^2 = 1435.394$, $df = 513$; $p < .0001$, $\chi^2/df = 2.798$, GFI = 0.902 and RMSEA = 0.079) indicated that the proposed structural model had a reasonably good fit to the data. Figure 2 reports the properties of the structural model and the standardized path coefficients for the estimated relationships. Table 4 presents a summary of the hypotheses testing results.

As presented in Table 4, the standardized paths coefficients between the environmental, social and economic sustainability dimensions of the hospitality supply chain and consumer satisfaction were significant and positive (Hp1a: $\beta_{1A} = 0.292$, p -value $< .0001$; Hp1b: $\beta_{1B} = 0.335$, p -value $< .0001$; Hp1c: $\beta_{1C} = 0.133$, p -value = .044). These findings suggest that sustainability practices of the hospitality supply chain towards environment, society and financial returns have a positive significant impact on consumer satisfaction. Hence, these results provided support for the hypotheses 1a, 1b, and 1c.

As presented in Table 4, findings indicated that only the path between the economic dimension and loyalty was significant and positive (Hp2c: $\beta_{2C} = 0.120$, p -value = .019). The relationship between the environmental dimension and loyalty (Hp2a: $\beta_{2A} = 0.025$, p -value = .670) and the relationship between social dimension and loyalty (Hp2b: $\beta_{2B} = -0.090$, p -value = .173) were not found to be significant. Therefore, only hypotheses 2c was supported, while hypothesis 2a and 2b were rejected. Similar to the result of Hypothesis 2, the impact of economic dimension on willingness to pay a premium was positively significant (Hp3c: $\beta_{3C} = 0.167$, p -value = .022), while the standardized path coefficients between environmental and social dimension and willingness to pay a premium were not significant (Hp3a: $\beta_{3A} = 0.089$, p -value = .267; Hp3b: $\beta_{3B} = 0.015$, p -value = .866). Therefore, hypotheses 3c was supported, while hypothesis 3a and 3b were rejected. Findings further indicated a direct positive relationship between satisfaction and loyalty (Hp4: $\beta_4 = 0.862$, p -value $< .0001$) and between loyalty and willingness to pay higher prices (Hp5: $\beta_5 = 0.479$, p -value $< .0001$), which provided support for hypotheses 4 and 5.

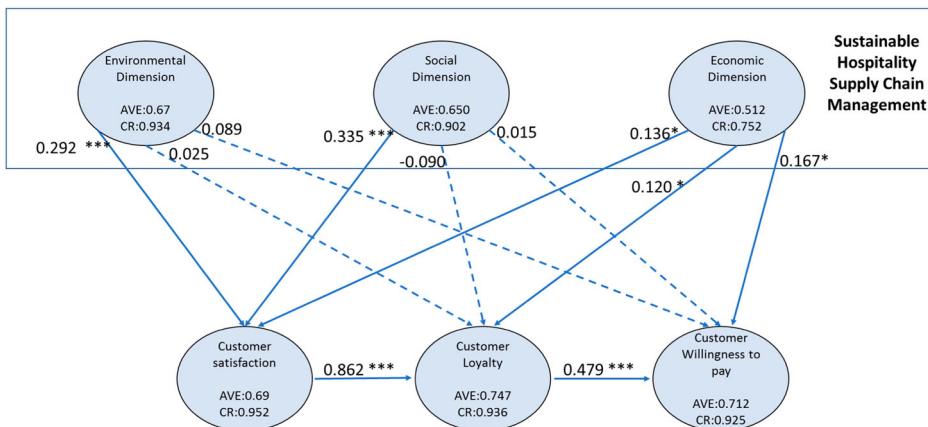
**Figure 2.** The results of the structural equation model.

Table 4. Hypotheses, standardized path coefficients, *p*-Value of the structural model.

		Standardized path coefficients	<i>p</i> -Value	
Hypothesis 1				
Hp1a	The environmental dimension of the SHSCM has a positive impact on consumer satisfaction	0.292	<.0001	Supported
Hp1b	The social dimension of the SHSCM has a positive impact on consumer satisfaction	0.335	<.0001	Supported
Hp1c	The economic dimension of the SHSCM has a positive impact on consumer satisfaction	0.136	.044	Supported
Hypothesis 2				
Hp2a	The environmental dimension of the SHSCM has a positive impact on consumer loyalty.	0.025	.670	Not supported
Hp2b	The social dimension of the SHSCM has a positive impact on consumer loyalty.	−0.090	.173	Not Supported
Hp2c	The economic dimension of the SHSCM has a positive impact on consumer loyalty.	0.120	.019	Supported
Hypothesis 3				
Hp3a	The environmental dimension of the sustainable hospitality supply chain has a positive impact on consumer willingness to pay higher prices.	0.089	.267	Not Supported
Hp3b	The social dimension of the sustainable hospitality supply chain has a positive impact on consumer willingness to pay higher prices.	0.015	.866	Not supported
Hp3c	The economic dimension of the sustainable hospitality supply chain has a positive impact on consumer willingness to pay higher prices.	0.167	.022	Supported
Hypothesis 4				
Hp4	Consumer satisfaction has a significant positive impact on consumer loyalty.	0.862	<.0001	Supported
Hypothesis 5				
Hp5	Consumer loyalty has a significant impact on consumers' willingness to pay higher prices.	0.479	<.0001	Supported

Overall, the model suggests that only the economic dimension of the SHSCM has a direct positive impact on satisfaction, loyalty and willingness to pay higher prices while social and environmental dimensions have a direct positive impact only on consumer satisfaction. Moreover, the results confirm that consumer satisfaction has a positive impact on loyalty that in turn influences consumers' willingness to pay higher prices directly.

Discussion

This study investigates the impacts of sustainability practices of companies in the hospitality supply chain on consumers' satisfaction, loyalty towards and willingness to pay higher prices. By investigating the impacts of all three dimensions of sustainability practices of the hospitality supply chain on consumers' attitudes and behaviours, this study makes important theoretical contributions to the field of hospitality. Since most pertinent studies focused on sustainability practices of individual companies on one of the three dimensions of sustainability, findings reported in this study offer important insights that advance existing knowledge on sustainable supply chain management in hospitality. Specifically, findings suggest that as the nature of competition shifts from the individual company level to the supply chain level, sustainability initiatives that are woven into the fabric of the entire hospitality supply chain can produce relatively more positive outcomes (Ashby, Leat, & Smith, 2012; Xu & Gursoy, 2015a).

Overall, this study suggests that all three dimensions of sustainability practices examined in this study directly and/or indirectly impact consumers' attitudes and behaviours, therefore concurring with past studies (Berezan et al., 2013; Lee & Heo, 2009; Xu & Gursoy, 2015b). While sustainability practices that focus on environmental conservation and protection have received the most attention in the literature, the current study indicates that social sustainability practices have the highest impact

Table 5. Dimensions and indicators of the model.

Code	Dimension	Item
E	Environmental dimension	
E1	Environmental dimension: Purchasing greener products	
E11		Use natural cleaning alternatives (e.g. lemon juice, vinegar, salt)
E12		Purchase environmentally friendly products
E13		Avoid purchasing overly packaged products
E14		Use natural products in hotel rooms
E15		Purchase organic certified food
E2	Environmental dimension: Greener service process	
E21		Use compact energy saving fluorescent lighting
E22		Implement an energy saving programme
E23		Use solar power instead of fuel
E24		Use water-saving flush in bathrooms
E3	Environmental dimension: Product management during Use	
E31		Provide information on public transportation, walking and cycling routes
E32		Develop an environmental policy
E34		Communicate the environmental policy to consumers
E35		Promote membership of environmental bodies/charities
E4	Environmental dimension: Product life extension	
E41		Re-use foil, paper, envelopes, and menus
E42		Supply guests with TV remote controls with rechargeable batteries
E43		Furnish rooms with environmental-friendly materials
E5	Environmental dimension: Recycling	
E51		Use cloth napkins instead of using one-time paper napkins
E52		Collect hand-washing water to water plants
E53		Recycle cooking oil
E54		Use recyclable packing materials or containers
E55		Avoid items that are not recyclable
E56		Collect and sell sorted waste and recyclable components
E6	Environmental dimension: Pollution control	
E61		Implement waste-disposal practices
E62		Reduce the amount of waste per guest night
E63		Reduce operating noise volume as much as possible
E7	Environmental dimension: Environment management systems	
E71		Use air purification equipment to make wasted air emissions from the central air conditioning have less pollutants
E72		Monitor water consumption
E73		Install water saving devices (e.g. flow regulators, waterless urinals)
E74		Use thermostat control and organic air fresheners
E75		Use environment evaluation systems
E76		Install grease interceptor to eliminate waste grease and food residues
E77		Use environmental information systems that allow information sharing and customized reporting
E78		Use a temperature control system
S	Social dimension	
S1	Social dimension: Employees	
S11		Invest in employee development
S12		Engage in employment diversity
S13		Promote fair treatment of all employees
S14		Create a safe and healthy work environment
S15		Provide measures that ensure safe and healthy working conditions for all employees

(Continued)

Table 5. Continued.

Code	Dimension	Item
S16	Social dimension: Consumers	Comply with labour legislation and employee contracts
S17		Support all employees who want to pursue further education
S18		Listen to employees' suggestions
S19		Provide all employees with proper and fair wages that reward them for their work
S111		Treat all employees equally and respectfully
S112		Provide training and development for employees
S113		Provide equal opportunity in the hiring, training, and promotion for women and minorities
S2		Respect the rights of consumers
S21		Provide safe environment for consumers
S22		Develop a fair pricing strategy
S23	Social dimension: Community	Improve product quality and enhance added value
S24		Be consumer-oriented
S25		Provide all consumers with high-quality services and products
S26		Provide all consumers with accurate and adequate information in making purchasing decisions
S27		Treat all consumers fairly
S28		Respond to complaints of all consumers in a timely manner
S3		Organise activities for the local community
S31		Encourage hotel employees to take part in various kinds of social events
S32		Improve the quality of life of people in the community through financial support (e.g. donating money to the poor and disabled)
S33		Financially support education in the local community
S34	Social dimension: Suppliers	Stimulate the economic development in the community
S35		Donate to the community
S36		Provide financial support for community activities
S37		Encourage employee participation in community projects
S38		Pay suppliers for their services and supplies on time
S4		Establish long-term partnerships with suppliers
S41		Bring social responsibility into the supply chain management
S42		Inform all suppliers about organizational changes that affect their operations
S43		Obey governmental regulations
S44		Create partnerships with government agencies
S5	Social dimension: Government	Support governments' actions
S51		Operate legally and ethically
S52		
S53		
S54	Economic dimension	High return on their assets
EC		High dividend payment
EC1 (Economic dimension: Revenue growth)		High cash flow
EC11		High net sales growth
EC12		High overall performance and success level
EC13		High competitive position
EC14		High-profit growth
EC15		High occupation rate growth
EC16	Economic dimension: Cost control	Low labour cost
EC17		Low cost of their services
EC2		Low operational cost
EC21		Low physical capital
EC22	Economic dimension: Market share growth	High rate of new product introduction to market
EC23		High advertising and marketing intensity
EC24		Effective development and utilization of their sales force
EC3		Strong brand identification
EC31		
EC32		
EC33		

(Continued)

Table 5. Continued.

Code	Dimension	Item
EC34	Consumer Satisfaction	New methods and technologies to create superior products
EC35		Special products to offer a new consumer group or new market segment
CS		
CS1		I am interested in staying/going at this type of hotel/restaurant
CS2		I will be very happy if I can go at this type of hotel/restaurant
CS3		I will be very satisfied if a hotel/restaurant can provide such level of service
CS4		My choice to stay in the hotel/restaurant will be a wise one
CS5		I think it would be the right thing to stay/go at this type hotel/restaurant
CS6		This type of hotel/restaurant provides the exact services I need
CS7		This type of hotel's/restaurant's services would meet my expectations
CS8		If available, I intend to stay/go at this type of hotel/restaurant
CS9		I would frequently stay/go at this type of hotel/restaurant
CL	Consumer Loyalty	
CL1		I will recommend this type of hotel/restaurant to my friends, relatives or colleagues
CL2		I will spread positive recommendations of this type of hotel/restaurant to others
CL3		I will stay at this type of hotel/restaurant whenever possible
CL4		I will encourage others to go to this type of hotel/restaurant
CWP	Consumer Willingness to Pay	
CWP1		This type of hotel/restaurant will be my first choice
CWP2		I am willing to pay a premium to stay at this type of hotel
CWP3		I am happy to pay more to stay/go at this type of hotel/restaurant
CWP4		Most of my friends, family or relatives would be willing to pay a premium to stay at this type of hotel
CWP5		I will pay extra to stay/go at this type of hotel/restaurant
CWP6		It is worth to pay more to stay/go at this type of hotel/restaurant

on consumer satisfaction ($\beta = 0.34, p < .05$), followed by environmental dimension ($\beta = 0.29, p < .05$) and economic dimension ($\beta = 0.14, p < .05$).

Findings also suggest that among all three dimensions of sustainability, only economic sustainability practices tend to have a direct impact on consumer loyalty. The impacts of social and environmental sustainability practices on loyalty were found to be mediated by satisfaction. While the reported significant impact of satisfaction on loyalty is similar with the results of earlier studies (Chaudhuri & Holbrook, 2001; Wu & Cheng, 2018), the current study suggests that social and environmental dimensions indirectly impact loyalty through consumer satisfaction. This finding contradicts with previous study findings that reported a direct positive relationship between sustainability practices and consumer loyalty (e.g. Xu & Gursoy, 2015b). This contradictory finding might be due to the fact that European travellers' attitudes and behaviours toward sustainability practices performed by the member of hospitality supply chain were examined in this study, while the study conducted by Xu and Gursoy (2015b) was focused on American travellers' attitudes and behaviours. Nonetheless, this study corresponds to previous research reporting an indirect relationship between sustainability practices and consumer loyalty (e.g. Martinez & del Bosque, 2013). Some of the earlier studies have suggested that the indirect impact of sustainability practices on loyalty might be mediated by other constructs such as service quality (Mandhachitara & Poolthong, 2011), trust in company (Martinez & del Bosque, 2013) and satisfaction. This study also supports this argument.

Moreover, findings reveal that among all three dimensions of sustainability, economic sustainability practices directly influence consumers' willingness to pay higher prices. Contrary to previous studies, sustainability practices related to the social and environment dimensions have an indirect impact on willingness to pay higher prices and are mediated by loyalty and satisfaction. The

difference in results might be explained by the fact that consumers may be willing to pay higher prices if they view the company's sustainability practices as adding value to their experiences with hospitality products and services (Tarfasa & Brouwer, 2013), thereby increasing their satisfaction. Therefore, if sustainability practices increase satisfaction, hospitality consumers may be more willing to pay higher prices for those sustainable products and services compared to practices that do not have any direct impact on their satisfaction (Parsa, Lord, Putrevu, & Kreeger, 2015).

Additionally, this study identified significant positive relationships between economic sustainability practices and individuals' attitudes and behaviours; thereby, adding to extant literature on the impacts of economic sustainability practices on hospitality consumers' attitudes and behaviours, which has been growing in recent years (Buckley, 2012; Xu & Gursoy, 2015a). Findings in this study indicate that hospitality companies' positive financial results including market share, revenue growth and effective cost control can have positive impacts on consumers' satisfaction, loyalty and willingness to pay higher prices. Consumers may care about hospitality companies' operating and profitability efficiencies as positive results may enable companies to provide high-quality hospitality experiences and services and, hence, increase their brand reputation (Xu & Gursoy, 2015a). Positive financial performance may enable hospitality companies to offer additional differentiated and higher quality hospitality experiences and services. Findings also confirm the existence of significant positive relationships between consumer satisfaction and consumer loyalty as well as a significant positive impact of loyalty on consumers' willingness to pay a premium for sustainable products and services, as indicated in extant literature (e.g. Nunkoo et al., 2013).

Conclusions, implications and limitations

This study investigated the impacts of sustainability practices of companies in a hospitality supply chain on consumers' perceptions and behavioural intentions utilizing data collected from European consumers. Interesting conclusions emerge which inform existing knowledge on sustainable hospitality supply chain management. First, while economic sustainability practices have significant positive impacts on satisfaction, loyalty and willingness to pay higher prices, environmental and social sustainability practices have significant direct positive impacts on satisfaction and indirect impacts on loyalty and willingness to pay higher prices. As the impacts of sustainability practices associated with each dimension on consumers' attitudes and behaviours tend to vary, it is critical for hospitality companies to prioritize their sustainability initiatives and actions based on the estimated positive influence of each sustainability practice on consumers' perceptions and intentions. Second, findings suggest that satisfaction is likely to mediate the impact of environmental and social dimension practices on consumer loyalty. Sustainability practices of companies in a hospitality supply chain can directly influence consumer satisfaction, which in turn may result in higher consumer loyalty and significantly greater willingness to pay higher prices. Furthermore, initiation and implementation of sustainability practices can improve the financial performance of all the members in a hospitality supply chain (Hall et al., 2012). Thus, participation of all the companies that are part of a hospitality supply in sustainability practices can have significant positive impacts on companies' success. Long-term focus on collaboration and cooperation and sharing critical market information may help all companies in the supply chain to maximize their profits.

Members of a hospitality supply chain should develop and improve social and environmental sustainability practices by investing additional resources in those areas that will improve their financial performance. Such strategies may include actions to operating efficiencies by decreasing costs or improving productivity since improvements in operating efficiencies will result in improved financial performance. Improved financial performance can further enable companies to offer higher quality hospitality experiences that may result in higher satisfaction, loyalty and willingness to pay higher prices (Singal, 2014; Sun & Kim, 2013; Xu & Gursoy, 2015a). Additionally, companies in a supply chain can develop human resource policies and practices to recruit and retain locals as employees, who may help hospitality companies to provide outstanding hospitality experiences

with a local flavour. They may also need to provide ongoing training to employees in order to enhance the quality of hospitality experiences provided to consumers and improve the service delivery process, which can provide invaluable value-added benefits to consumer (Kim, Knutson, & Han, 2015). This process may ultimately result in increased loyalty and greater willingness to pay higher prices (Tarfasa & Brouwer, 2013). Furthermore, developing and implementing initiatives and practices to make local businesses part of the supply chain may also improve consumers' perceptions and behavioural intentions. For example, local businesses such as locally-owned farms, local equipment and furniture manufacturers, local craft producers, local educational institutions and so on may be integrated into the supply chain as the upstream members of the hospitality supply chain. These local upstream members can deliver products and services to midstream enterprises such as hotels (Xu & Gursoy, 2015a). For example, hotels and restaurants can directly purchase fresh, flavourful ingredients for their menu items directly from locally-owned farms, furniture from local equipment and furniture manufacturers and local artworks and crafts directly from local artists. Local educational institutions can provide training and educational opportunities to employees so that they advance their careers. Integration of local businesses into the hospitality supply chain as upstream members may have significant impacts on how consumers view those companies in the hospitality supply chain. Integration of local elements such as local customs and culture into the service delivery process and design of facilities is also vital (Kasim, Ekinci, Altinay, & Hussain, 2018). Such integration can help businesses in the supply chain to provide authentic and unique experiences to their end users. Furthermore, such integration might also be viewed as value-added benefits to consumers and, thus, improve their satisfaction and reinforce loyalty and willingness to pay higher prices for that experience (Perez, Garcia de los Salmones, & Rodriguez del Bosque, 2012; Scarpa, Mara, & Kenneth, 2008).

Though this study makes meaningful theoretical and practical contributions to the knowledge in the hospitality field, it is not without limitations. The study focuses only on the sustainability practices of companies that are part of a hospitality supply chain. It does not control for the possible differences that may exist in consumers' perceptions towards sustainability practices of upstream and midstream companies in the supply chain. While some businesses in the hospitality supply chain have close encounters with consumers, others may not have any contacts with consumers. Consumers may not even be aware of the existence of some of the companies that are part of the hospitality supply chain. The level of interaction and consumers' level of knowledge can have significant impacts on consumer perceptions and behavioural intentions. Furthermore, consumers' socio-demographic characteristics and their personality traits may moderate how they view these impacts. Future research should investigate the potential moderating effects of consumers' socio-demographic characteristics and the level of interactions between the relationship of hospitality businesses' sustainability practices and consumer attitudes and behaviours. Though sustainability in the hospitality supply chain management may yield remarkable results for hospitality companies, the costs of developing and implementing those sustainability practices cannot be ignored. This paper primarily focuses on the positive outcomes of sustainability practices, yet does not examine the cost, the type and the number of sustainability practices that need to be developed by each member of a sustainable hospitality supply chain. Future studies should examine the cost structure and the possible benefits of each sustainability practice that each member of a hospitality supply chain may need to develop.

Note

1. For the environmental, social and economic dimensions, we report only the first-order factors (not the original items). The results for each item are available on request.

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