

Article

Accommodation Consumers and Providers' Attitudes, Behaviours and Practices for Sustainability: A Systematic Review

Colin Michael Hall ^{1,2,3,4,*}, Natasha Dayal ¹, Dea Majstorović ¹, Hamish Mills ¹, Leroy Paul-Andrews ¹, Chloe Wallace ¹ and Van Dao Truong ^{5,6}

¹ Department of Management, Marketing and Entrepreneurship, University of Canterbury, Christchurch 8041, New Zealand; natashadayal@gmail.com (N.D.); dea.maj@gmail.com (D.M.); millsclan@clear.net.nz; (H.M.); leroy.paulandrews@pg.canterbury.ac.nz (L.P-A); chloe.wallace@pg.canterbury.ac.nz (C.W.)

² Department of Geography, University of Oulu, Oulu 90014, Finland

³ School of Business and Economics, Linneaus University, Nygatan 18B, 392 34 Kalmar, Sweden

⁴ School of Hospitality and Tourism, University of Johannesburg, Johannesburg 2006, South Africa

⁵ Tourism Research in Economic Environs & Society (TREES), North-West University, Potchefstroom Campus, Potchefstroom 2520, South Africa; vandao83@yahoo.co.uk

⁶ Department of Tourism and Hospitality, National Economics University, Hai Ba Trung District, Hanoi, Vietnam

* Correspondence michael.hall@canterbury.ac.nz

Academic Editor: Ian Patterson

Received: 1 June 2016; Accepted: 29 June 2016; Published: 2 July 2016

Abstract: Accommodation and lodging are an integral component of the tourism and hospitality industry. Given the sectors' growing contribution to resource consumption and waste, there is a growing body of literature on the attitudes, behaviours and practices of consumers, managers, staff and owners of lodging with respect to sustainability. This paper presents the results of a systematic analysis of articles on attitudes, behaviours and practices of consumers and the provision of accommodation with respect to sustainability. The results indicate that there is a dearth of longitudinal studies on the sustainability of practices and behaviours. There are limitations in geographical coverage as well as methods, with research dominated by convenience sampling approaches. It is concluded that while there appear to be improvements in the potential sustainability of lodging with respect to technological approaches, the lack of systematic long-term studies on behavioural interventions represents a significant challenge to reducing the absolute emissions of the sector as well as reductions in energy and water use and waste production. Given the lack of longitudinal studies, it is not known whether observed behavioural changes are sustained over time.

Keywords: accommodation; behavioural change; behavioural intervention; hospitality; lodging; social marketing; sustainable behaviour; sustainable consumption; sustainable practices; tourism

1. Introduction

The impacts of tourism on the natural and social environment have been a long-standing focus of tourism and hospitality research [1]. As a subsector, accommodation and lodging have been recognised as having a range of significant effects. After aviation and car transport, the accommodation sector is estimated to contribute 21% of tourism's global greenhouse gas emissions [2]. In addition, the sector is a major user of energy, land and water resources as well as a contributor to water, food and other waste [3–7].

Much of the focus in improving the sustainability of the accommodation and lodging sector, as with tourism overall, has been on encouraging the adoption of technologies and management systems that produce greater efficiencies in per room or customer inputs and outputs [7–13]. For example, the World Economic Forum [14] (p. 7) suggests, ‘For the accommodation cluster, reductions in carbon emissions will primarily be driven by the use of existing mature technologies in lighting, heating and cooling that can significantly improve hotel energy efficiency’. Undoubtedly, greater efficiencies are an important component of improvements in sustainable consumption of tourism resources. However, concerns also exist about the extent they may contribute to undesirable rebound effects unless there is also simultaneous attention paid to changes in actual consumption behaviour as well as the adoption of technological, behavioural and policy innovations that also contribute to greater sustainability [15–24]. Therefore, there is a growing body of literature on the attitudinal and behavioural dimensions of sustainable tourism and hospitality, including with respect to accommodation and lodging, as well as the persistent gap between consumers’ typically positive explicit attitudes towards sustainability and their actual consumption behaviours [22,24–27].

Research on sustainable accommodation attitudes and practices is centred around investigating the perspectives of producers and consumers. Producer or supply side research focuses on the attitudes of accommodation managers, owners and employees toward sustainability and their environmental policies and practices. Consumer focussed research examines the perceptions and behaviours of tourists towards the sustainable practices of accommodation providers, consumer practices, support for green accommodation product, and the impacts of government or producers actions on consumer behaviour. In addition, there is growing interest in stakeholder based approaches to understanding the sustainability policies and practices of accommodation providers [28,29]. However, despite significant interest in improving the sustainability of accommodation and lodging properties, there is little knowledge of the extent to which changes in consumption behaviours and sustainability practices have been maintained over time nor of the means by which behaviours and practices have been studied. Therefore, this study provides a systematic review of journal articles covering issues of consumer and producer behaviours and attitudes with respect to the greening and sustainability of accommodation and lodging. By using the systematic review methodology, a broad overview of the literature is created, allowing trends and themes to become clear. From this, conclusions can be drawn on the key findings and on future research directions.

2. Materials and Methods

The power of systematic literature reviews in providing statistically reliable conclusions has long been acknowledged in the field of health, where the use of systematic reviews is integral to evidence-based healthcare [30]. However, in tourism the use of systematic reviews is limited [31].

The PRISMA framework and 27-item checklist were used to guide the data selection and collection for this paper [32,33]. As with all research, the value of a systematic review depends on what was done, what was found, and the clarity of reporting, which in turn is based upon the clarity of the original research and its interpretation. The aim of the PRISMA Statement is therefore to help authors improve the reporting of systematic reviews and meta-analyses [33].

The search aimed to account for several dimensions that make up the focus of this review. To do this, the search looked at four keyword groups: tourists, behaviour, environment and accommodation type. Within each keyword group, synonyms were identified within relevant research through searches undertaken during the preliminary narrative literature review. This ensures that no relevant research is excluded through the use of applicable terminology that is not identical to the keywords. Keywords were identified via reading through literature and communication with researchers in the sustainable tourism and hospitality field who acted as an expert reference group. Search terms were also refined via trial exercises and the capacity of any search to identify relevant benchmark papers.

The formal systematic review was undertaken by an examination of the Web of Science and Scopus databases along with library searching and surveys of Google Scholar. The Scopus database was found to

be more advantageous for the tourism and hospitality field because of its wider journal coverage. For the purpose of this study, only records from peer-reviewed periodicals were included in the systematic review. Therefore, books and book chapters, conference papers, and industry and government reports were excluded from the systematic review but were used for the thematic review that helped identify key terms. The full search term below shows the exact terms used to generate potential records for examination. Other refining elements used in searches of the Scopus databases were to select only document types classified as “articles” or “reviews”, and only documents published before 2015: TITLE-ABS-KEY (“consumer” OR “target audience” OR “tourism” OR “tourist” OR “travel*” OR “holiday*” OR “VFR” OR “vacation*”) AND TITLE-ABS-KEY (“response” OR “perception” OR “attitude” OR “behaviour” OR “motivation*”) AND TITLE-ABS-KEY (“sustain*” OR “green*” OR “environment*” OR “ecolog*” OR “CSR” OR “carbon” OR “emission*” OR “energy” OR “waste”) AND TITLE-ABS-KEY (“accommodation” OR “backpacker*” OR “hostel*” OR “motel*” OR “hotel*” OR “lodging” OR “caravan park*” OR “holiday park*” OR “cabin*” OR “campground*” OR “resort*”) AND DOCTYPE (ar OR re) AND PUBYEAR < 2015.

The initial database search retrieved 572 documents. After screening for papers clearly not relevant to the subject, the number of appropriate articles was reduced to 105. From there, a small number of non-duplicate papers were added raising the total to 109 papers. Out of the 109 papers, only 93 were reviewed, due to the fact that nine could not be accessed, and seven were found to be not relevant to the study. Data was then recorded for each individual article including research method, sample method, sample size, sample demographics, target sample audience, geographical location of study, accommodation type (if applicable), variables, longitudinal study or not, and the key findings.

3. Results

Of the 93 papers, 44 were primarily consumer related with a main focus on tourists and visitors (Table 1). The remaining studies were producer related and studied specific hotels, their managers and employees (Table 2). Only two papers [34,35] included substantive research on both consumer and producer perspectives with respect to environmental practices and perceptions. The various elements of these papers has been included in both tables for ease of convenience. Over two-thirds of studies were undertaken in the period 2010–2014, reflecting the growing interest in the field. Many of the studies were exploratory in nature either reporting on profiles or not specifically aiming to test theory or scales, although many were theoretically informed. Of the 93 studies, only one was longitudinal with respect to charting changes in behaviours over time. This was a producer related study on attitudes and behaviours towards climate change by small-scale rural accommodation providers in New Zealand [36]. The absence of such studies arguably has significant implications for understanding the sustainability of behavioural change.

Table 1. Overview of consumer oriented papers.

Citation & Location	Sample	Method	Main Variables	Key Findings
Firth & Hing [34]	Sample Size ($n =$)	Interview & survey	-	17% of respondents stated that because of the increased level of environmental awareness in Byron Bay, they had been implementing ecofriendly practices such as recycling while holidaying. 12% admitted that, while environmentally conscious at home, they abandoned this level of responsibility while on holiday.
1999	Target Sample			
Byron Bay, Australia	Sample Demographic			
Fairweather, Maslin & Simmons [37]	Sample Size ($n =$)	Convenience interviews	-	One-fifth of respondents recalled places with eco-labels, and only 13% had ever heard of any tourism eco-label. 33% had some experience of ecolabels. 61% of respondents expressed biocentric values, 39% expressed ambivalent values but not anthropocentric values towards nature.
2005	Target Sample			
Christchurch, New Zealand	Sample Demographic			
Lee & Moscardo [38]	Sample Size ($n =$)	Survey	Environmental knowledge, awareness, attitudes and behavioural intentions, pre-visit and post-visit	Few statistically significant differences between pre-visit and post-visit samples. Visitor awareness of, and involvement in, environmental management practices, and participation in nature tour activities had significant effect on environmental attitudes and behaviours. Attractions and natural experiences are major pull factors. Escapism is often listed as a push factor. Pull factors seem to have stronger influence.
2005	Target Sample			
Australia	Sample Demographic			
Chan & Baum [39]	Sample Size ($n =$)	Purposive interviews	Motivational factors for visiting an ecolodge	Attractions and natural experiences are major pull factors. Escapism is often listed as a push factor. Pull factors seem to have stronger influence.
2007	Target Sample			
Malaysia	Sample Demographic			
Manaktola & Jauhari [40]	Sample Size ($n =$)	Convenience survey	Consumer attitude, behaviour and willingness to pay for green practices, consumer willingness to pay	Consumers expect tangible green practices such as towel and linen reuse, and communication about green practices. They also reported that they would pay between 4%–6% extra for visible green practices.
2007	Target Sample			
India	Sample Demographic			
Nepal [41]	Sample Size ($n =$)	Intercept survey	Hikers' importance and satisfaction of amenities	Hikers rated lodging recommendations from peers, comfortable living room, environmental quality, peaceful atmosphere, and host friendliness highly. Less importance on sanitation and hygiene. Were willing to pay a little extra for eco-fee.
2007	Target Sample			
Nepal	Sample Demographic			

Table 1. Cont.

Citation & Location	Sample		Method	Main Variables	Key Findings
Dalton, Lockington & Baldock [42]	Sample Size (n =)	-			
2008	Target Sample	Guests in 3.5 to 4.5 star cabin and hotel accommodation	Convenience survey	Energy retrieved from renewable energy sources, amount willing to pay for accommodation	Customers appeared willing to pay 1%–5% more if the energy used from the hotel was from a renewable source.
Brisbane, Australia	Sample Demographic	-			
Goldstein, Cialdini & Griskevicius [43]	Sample Size (n =)	1058			
2008	Target Sample	Guests in midsize, midprice hotel	Experiment	Phrasing on a message used on a towel rack regarding the hotel towel reuse programme, guest participation within the hotel towel reuse programme	Through crafting a message with a descriptive norm a significantly higher rate of guests participated in the towel reuse programme than those who received a generic environmental message.
USA	Sample Demographic	-			
Tsai & Tsai [44]	Sample Size (n =)	815			
2008	Target Sample	Guests of international 5-star hotels	Intercept survey	Environmental ethics, green consumption behaviour	Participants felt willing to support sustainable hotel practices to a greater extent than their personal actions. No difference in preferences for 'green' and non-'green' hotels
Taiwan	Sample Demographic	59% female, 45% aged 20–39			
Choi, Parsa, Sigala & Putrevu [45]	Sample Size (n =)	200			
2009	Target Sample	University students	Convenience survey	Environmentally responsible practices, willingness to pay	Greek participants regarded environmentally responsible practices more important than US participants.
Greece & USA	Sample Demographic	-			
Han, Hsu & Sheu [46]	Sample Size (n =)	428			
2010	Target Sample	Hotel guests	Convenience survey & focus group	Attitude toward green products, intentions to stay at a hotel	A consumer's 'green' attitude is a key mediator of their intention to stay at a 'green' hotel.
USA	Sample Demographic	51.2% female, 44.5% average age, 89.5% graduates			

Table 1. Cont.

Citation & Location	Sample		Method	Main Variables	Key Findings
Han & Kim [47]	Sample Size (n =)	469	Purposive survey	Intention to revisit, service quality, satisfaction, overall image and frequency of past behaviour	Study showed that the theories of Planned Behaviour and Reasoned Action were not good predictors of revisit intentions for green hotels. The study found four constructs that could be incorporated into these models: service quality, satisfaction, overall image and frequency of past behaviour.
2010	Target Sample	US hotel customers			
USA	Sample Demographic	51% female, 80.6% had a tertiary qualification 79% earned less than \$69,000, 71% stayed at a green hotel one or less times per year			
Kim & Han [48]	Sample Size (n =)	389	Random survey	Willingness to pay for green hotels, Theory of Planned Behaviour (TPB) variables as well as environmental concerns, perceived customer effectiveness and environmentally conscious behaviours	All variables the research added to the TPB were predictive of intention to pay conventional hotel prices for a green hotel. Respondents were happy to have minor inconveniences, e.g., reusing towels and using recycled products, and were keen to learn about the positive environmental attributes of green hotels.
2010	Target Sample	US hotel customers			
USA	Sample Demographic	52% female, mean age of 44.92%, 34.3% were college graduates, 52.7% stay in a hotel 2 to 5 times a year			
Kwan, Eagles & Gebhardt [49]	Sample Size (n =)	331	Random survey	-	The majority of ecolodge guests were US residents between 36 and 55 years of age, of higher income brackets, spent 1–2 weeks in Belize, got their travel information from the Internet, and intended to travel to Belize to experience the natural environment.
2010	Target Sample	Ecolodge Guests			
Belize	Sample Demographics	25.7% aged 46–55 73% US residents 77.4% graduates			
Lee, Hsu, Han & Kim [50]	Sample Size (n =)	416	Random survey	The green branding of a hotel, intentions to stay in a “green” hotel	Green consumers have greater intentions to stay at a “green” hotel
2010	Target Sample	Hotel users and hotel staff			
USA	Sample Demographic	80% white, 88% graduate, 52% female, 67% earn between \$40,000 and \$70,000 USD			

Table 1. Cont.

Citation & Location	Sample	Method	Main Variables	Key Findings
Tsagarakis, Bounialetou, Gillas, Profylienoi, Pollaki & Zografakis [51]	Sample Size (n =)			
2011	Target Sample	Intercept survey	Willingness to pay and use hotels with energy saving installations and/or renewable energy sources, demographics	The vast majority of consumers would prefer to stay in a hotel with energy saving installations and/or renewable energy sources assuming identical cost and quality. The majority of these consumers would be willing to pay extra for hotels that use these sustainable energy practices
Crete, Greece	Sample Demographic			
Bastic & Gojic [52]	Sample Size (n =)			
2012	Target Sample	Intercept survey	Tourist expectations of four dimensions: hotel staff eco-behaviour, environmentally friendly and healthy equipment, efficient energy and water usage, availability of bio food, nationality, education, income, whether they stayed in an eco-certified hotel or not	The most important factor among tourists was the behaviour of hotel staff, including recycling and waste minimisation. The least important was the availability of organically sourced vegetarian food though all factors were found to be somewhat important. Level of education has no significant effect on expectations. There was a significant relationship between expectations and monthly income with higher income resulting in higher expectations.
Slovenia & Austria	Sample Demographic			
Chen & Peng [53]	Sample Size (n =)			
2012	Target Sample	Quota survey	Intention to stay at a green hotel and behaviour (whether they stayed at a green hotel), attitude toward eco-labels, perceived behaviour control, social norms and knowledge of hotel eco-labels	Those with higher knowledge and positive attitudes toward green hotels are more likely to stay at a green hotel. Those with lower knowledge are more likely to be motivated by the recommendations of others.
China	Sample Demographic			
do Valle, Pintassilgo, Matias & Andre [54]	Sample Size (n =)			
2012	Target Sample	Intercept survey	Willingness to pay tax, tourist segment	“typical sun and beach tourists”, show a low willingness to pay the proposed accommodation tax. The receptivity to this measure is above average in three segments, termed as “environmental steward tourists”, “nature oriented tourists” and “frugal tourists”.
Algarve, Portugal	Sample Demographic			
Hu [55]	Sample Size (n =)			
2012	Target Sample	Intercept survey	Attitude toward the advertisement, brand attitude and purchase intention, type of advertisement the consumer was exposed to as well as their level of involvement in environmental issues	Clear factual claims about environmental policy makes for more effective marketing communication than vague statements. Advertisements that emphasise self-expression are more effective than those that focus on concepts of nature. Those with low involvement less interested in both emotional and rational appeals
Taiwan	Sample Demographic			

Table 1. Cont.

Citation & Location	Sample		Method	Main Variables	Key Findings
Kim, Palakurthi & Hancer [56]	Sample Size ($n =$)	133	Random survey	Intention to stay at an environmentally friendly hotel, perceived effectiveness of environmentally friendly programs, gender, age, education, annual income, travel purpose, cost per night of last hotel, frequency of hotel stay and self-described environmental mindedness	The existence of four programs predicted intention to stay in an environmentally friendly hotel: solid waste and water program in guestroom, energy program, solid waste and water program in housekeeping, and a biodiversity program.
2012	Target Sample	Members of travel-related online communities			
-	Sample Demographic	-			
Chan [35]	Sample Size ($n =$)	1090	Convenience survey	Perceptions of hotels' green practices' impact, perceptions of hotels' green practices	The two statements that gained the highest level of agreement amongst both hotel managers and customers were: "The internet is an effective channel for marketing a hotel's green initiatives directly to customers"; and "Green hotels can elevate industry members' image and reputation to attract green tourists who demand green accommodation when travelling".
2013	Target Sample	Hotel customers and hotel managers			
Hong Kong	Sample Demographic	55 hotel managers, 1035 customers			
Ham & Han [57]	Sample Size ($n =$)	263	Intercept survey	Consumers' perceptions of hotels' green practices, customer loyalty to green hotels, perceived fit between a hotel's core business and its green practices	Environmental concerns moderate the link between perceptions of a hotel's green practices and visit intention. Perceptions of fit between a hotel's core business and its green practices significantly affect behavioral intentions.
2013	Target Sample	Airline passengers at terminal			
Korea	Sample Demographic	53% male, 28% income above \$40,000 USD			
Han & Chan [58]	Sample Size ($n =$)	30	Convenience based interviews	Perceived impact of sustainable practices in hotels, willingness to pay for green hotels, attitude toward sustainable tourism practices.	A majority of the interviewees were willing to pay higher rates for green hotel rooms
2013	Target Sample	Mainland Chinese tourists, English speaking international tourists			
Hong Kong	Sample Demographic	50% Chinese tourists, 50% English speaking tourists			
Kucukusta, Mak & Chan [59]	Sample Size ($n =$)	150	Intercept Survey	Willingness to stay at hotels implementing CSR practices; awareness of CSR practices	Visitors interpreted CSR as consisting of: community, policy, mission and vision, workforce, and environment. Environment and mission and vision are the most important factors affecting service quality, preference to stay, willingness to pay, and brand image.
2013	Target Sample	Tourists at key tourist attractions around Hong Kong			
Hong Kong	Sample Demographic	18% VFR, 15% work purpose, 54 % vacation, + other			
MacIntosh, Apostolis & Walker [60]	Sample Size ($n =$)	333	Convenience survey	Behavioural intentions; organisation's environmental responsibility (ER) initiatives	Consumers held moderate levels of environmental awareness and their behavioral intentions were mildly impacted by the organisation's ER initiatives. For employees the framing of environmental messages caused dissonance but consumers were influenced by the ER activities.
2013	Target Sample	Customers of a mountain resort			
Quebec, Canada	Sample Demographic	54% male 28.5% travelled less than 25 kms to resort			

Table 1. Cont.

Citation & Location	Sample	Method	Main Variables	Key Findings
Mensah & Mensah [61]	Sample Size ($n =$)	384	Intercept survey	72.2% of respondents did not believe that hotels impact negatively on the environment. Only 14.7% of respondents agreed that hotels claiming to be environmentally responsible were so.
2013	Target Sample	International tourists at tourist attractions		
Accra, Ghana	Sample Demographic	56% female, 52% bachelors degree		
Miao & Wei [62]	Sample Size ($n =$)	1185	Random survey	Participants reported a significantly higher level of pro-environmental behavior in a household setting. Normative motives are the dominant determinant of pro-environmental behavior in a household setting, and hedonic motives are the strongest predictor in a hotel setting
2013	Target Sample	Employees of an HR database		
USA	Sample Demographic	“Representative, diverse population”, 33% male		
Millar, Mayer & Baloglu [63]	Sample Size ($n =$)	571	Convenience survey	Attitudinal differences between business and leisure travelers are insignificant. A number of environmental actions a hotel can take that were important to consumers include: access to recycling bin in hotel lobby, occupancy sensors to control lighting energy use and sustainable towel and linen polices. This can be important for creating a green experience as well as mimicking the customer’s personal lifestyle.
2013	Target Sample	American travelers		
USA	Sample Demographic	Business travelers: 36% < 40 years, 52% earned >\$55,000 per year, 42% female, 87% had tertiary qualification Leisure travelers: 69% < 50 years old, 46% > \$55,000 pa, 57% female, 76% had tertiary qualification		
Miththapala, Jayawardena & Mudadeniya [64]	Sample Size ($n =$)	4500	Intercept survey	Hotel guests will increasingly desire to participate and assist hotels in achieving efficiency targets.
2013	Target Sample	Tourists at airport		
Sri Lanka	Sample Demographic	57% male, 43% female		
Prud’homme & Raymond [65]	Sample Size ($n =$)	473	Convenience survey	Customer satisfaction is positively influenced by the hotel’s adoption of sustainability practices. The level of customer satisfaction varies according to the hotel’s size and type of ownership.
2013	Target Sample	Hotel customers		
Quebec, Canada	Sample Demographic	61% female, 36% tertiary education- bachelor degree		
Slevitch, Mathe, Karpova & Scott-Halsell [66]	Sample Size ($n =$)	1140	Convenience survey	Confirmed non-linear nature of customer satisfaction response and indicated that lodging industry “green” attributes impact customer satisfaction similarly to facilitating attributes.
2013	Target Sample	University faculty of two universities		
USA	Sample Demographic	62% female, 70% married.		

Table 1. Cont.

Citation & Location	Sample	Method	Main Variables	Key Findings
Baker, Davis & Weaver [67]	Sample Size ($n =$)	208		
2014	Target Sample	Regular domestic tourists	Convenience survey	Pro-environmental attitudes, behaviours and perceptions of the hotel; intentions to stay in a “green” hotel
USA	Sample Demographic	68.3% female, 43.8% 26–35, 54.8% graduates		
Chan & Han [68]	Sample Size ($n =$)	237		
2014	Target Sample	University students	Factorial experimental design; convenience sampling	Attitude towards advertisement, attitude towards brand image, attitude towards advertising effect, gender, age.
Hong Kong	Sample Demographic	70% female, 30% male. 76% Hong Kong, 24% mainland China		
Chang, Tsai & Yeh [69]	Sample Size ($n =$)	350		
2014	Target Sample	People at the checkout counters of three of the 19 winners of a 2008 Taiwanese green hotel competition	Quasi-random survey	Tourists behaviour intentions for staying overnight at green hotels; environmental education
Taiwan	Sample Demographic	-		
Chen & Tung [70]	Sample Size ($n =$)	559		
2014	Target Sample	Anyone	Convenience questionnaire	-
Taiwan	Sample Demographic	87% 20–29 years old, 60% students		
Chia-Jung & Pei-Chun [71]	Sample Size ($n =$)	390		
2014	Target Sample	University staff, graduates and students	Convenience survey	Factors influencing selection of green hotels; selection of green hotels
Taiwan	Sample Demographic	58.7% females, 48.5% between 20 and 30 years old		
Esparon, Gyuris & Stoeckl [72]	Sample Size ($n =$)	610		
2014	Target Sample	Visitors to the Wet Tropics World Heritage Area	Random & intercept surveys	Attitudes toward the 8 attributes of the certification scheme; the perceived importance of each of these attributes; the perceived performance of tourist operators; type of tourism operator the respondent interacted with (accommodation, tour or attraction based business); certification status of tourism operator
Queensland, Australia	Sample Demographic	60% female, 55% below 50 years of age, 82% had post-secondary education		
				At accommodation visitors perceived most aspects of the certification scheme to be important. Consumers do not see certification as an important part of a tourism operator’s environmental policy. Visible environmental initiatives such as the upkeep of clean beaches are more important to consumers than programs that operate “behind the scenes”. Certified operators were perceived to perform better than non-certified operators on all attributes.

Table 1. Cont.

Citation & Location	Sample	Method	Main Variables	Key Findings	
Horng, Hu, Teng & Lin [73]	Sample Size ($n =$)	434			
2014	Target Sample	Foreign tourists in Taiwan			
Taiwan	Sample Demographic	Mainland China = 260, Hon Kong & Macau = 131, Japan = 16, South Korea = 10, Southeast Asia = 17	Convenience survey	Energy saving and carbon reduction behaviour	Energy saving and carbon reduction behaviour is little practiced by tourists. Tourists generally did not believe that tourism and related construction cause serious damage to the environment. Convenience is a main concern in practising sustainable behaviour.
Huang, Lin, Lai & Lin [74]	Sample Size ($n =$)	458			
2014	Target Sample	Business customers to hotels			
Shanghai, China	Sample Demographic	62% male, 38% female	Convenience survey	Green customer behaviour, age, gender, environmental consciousness	Statements of environmental protection are regarded more favorably by consumers than cash discounts. Different genders had significantly different green behaviours.
Liu, Wong, Shi, Chu & Brock [75]	Sample Size ($n =$)	243			
2014	Target Sample	Independent travelers who patronise locally managed 3–4 star hotels			
China	Sample Demographic	57.7% female, 71.2% were above 32 years old, 80.7% college educated	Convenience questionnaire	Brand preference, CSR performance and perceived brand quality	Chinese consumers are beginning to use CSR information to evaluate brands.
Noor & Kumar [76]	Sample Size ($n =$)	216			
2014	Target Sample	Tourists at Kuala Lumpur International Airport			
Malaysia	Sample Demographic	56.9% male, 90.8% 26–40	Intercept survey	Pro-environmental attitudes, pro-environmental intentions	Individuals who participated in pro-environmental behaviour (those who environmental attitude was more positive), were more likely to choose to stay at a “green” hotel
Sirakaya-Turk, Baloglu & Mercado [77]	Sample Size ($n =$)	1202			
2014	Target Sample	Tourists who had recently taken a round-trip of 200 miles			
USA & Canada	Sample Demographic	50.5% female, 27.45% 45–54, 84% white	Convenience survey	Pro-environmental values, behaviours; choice of hospitality provider	The sustainability of values of an individual predict an individual’s choice for sustainable hospitality businesses. Two clusters of individuals found: “strong sustainers” (environment supporting), and “centrists-sustainers” (environment-neutral).
Stumpf, Park & Kim [78]	Sample Size ($n =$)	917			
2014	Target Sample	University Staff			
USA	Sample Demographic	72.8% female, mean age 34.98	Convenience survey	-	Development of Appreciative—Consumptive Lodging Attribute Scale
Zupan & Milfelner [79]	Sample Size ($n =$)	234			
2014	Target Sample	Guests of small hotels			
Slovenia	Sample Demographic	48% male	Convenience survey	Guests’ perceptions of hotels’ social responsibility; personal values	Small hotels’ guests care about sustainability issues.

Table 2. Overview of producer oriented papers.

Citation & Location	Sample	Method	Key Variables	Key Findings
<i>Employees</i>				
Chan & Hawkins [80]	Sample Size ($n =$)	27	Case study: purposive Interview	Views of the hotel EMS programmes, how effectively these programmes are perceived to be implemented; views on environmentalism and the hotel market, job satisfaction, job motivation, job role and experience
2010	Target Sample	Employees of a hotel in Hong Kong		
Hong Kong	Sample Demographic	5 executive, 7 supervisory and 14 general staff		
do Paço, Alves & Nunes [81]	Sample Size ($n =$)	100	Convenience survey	-
2012	Target Sample	Employees of hotels		
Brazil	Sample Demographic	59% women 41% male		
Chou [82]	Sample Size ($n =$)	254	Convenience survey	Individual environmental beliefs, personal environmental norms, employees environmental behaviour; employees personal environmental attitudes
2014	Target Sample	Hotel employees		
Taiwan	Sample Demographic	74.8% women, mean age 33.8, 68.5% in non-management jobs, 65% had taken environment related courses		
Ferus-Comelo [83]	Sample Size ($n =$)	Not provided	Case study: purposive interviews and textual analysis	-
2014	Target Sample	Hotel employees and managers		
India	Sample Demographic	Staff of two Indian five-star hotels		
Teng, Horng, Hu & Chen [84]	Sample Size ($n =$)	369	Convenience survey	Employee energy and carbon literacy
2014	Target Sample	Hotel employees at international tourist hotels		
Taiwan	Sample Demographic	67.8% female, 51.8% aged 21–30, 49.6% university graduates		
Companies have well established practices that are generally respected by employees, hotels did not perform enough market research on consumers, and rely heavily on the Internet and word-of-mouth				
In hotels with weaker green organisational climates, there is a stronger relationship between personal environmental norms and employees' environmental behaviour, compared to hotels with stronger green organisational climates.				
Companies show awareness of the need to adopt more environmentally friendly practices and inform the public through Annual Reports and websites about their measures. Financial savings may have motivated lower energy consumption, but level of water consumption remains high, especially in relation to the availability and use of water.				
Respondents perceive themselves as knowledgeable about environment and climate change, but less familiar with carbon emissions, green architecture and green consumption.				

Table 2. Cont.

Citation & Location	Sample	Method	Key Variables	Key Findings	
<i>Owners & Managers</i>					
Deng, Ryan & Moutinho [85]	Sample Size ($n =$)	196			
1992	Target Sample	Hotel managers			
Canada	Sample Demographic	28% trading <5 years under existing ownership, 13% >1.5 years. 61% had less than 30 rooms, 15% had more than 100 rooms. Approximately 78% family owned and managed.	Systematic random sampling, questionnaire	Attitudes of hoteliers to environmental issues; level of profitability, size of hotel, location, years in trading, nature of ownership	Hoteliers tend to concur with environmental protection policies, and these attitudes are generally independent of profitability.
Firth & Hing [34]	Sample Size ($n =$)	6 Structured interviews with managers (60 guest surveys)			
1999	Target Sample	Backpacker hotel manager; Backpacker guests	Interview & survey	-	Most hostels focus on recycling, free transport, energy efficient light bulbs, low flow shower heads.
Byron Bay, Australia	Sample Demographic	-			
Becken, Frampton & Simmons [86]	Sample Size ($n =$)	120			
2001	Target Sample	Accommodation providers	Stratified sample survey	Energy consumption, accommodation type, business size	Hotels are the largest (net and per capita) energy consumers in the accommodation sector, making up 67% of the total 1.74 PJ consumed in 1999 (4.4% of the commercial sector's energy use and 0.4% of total energy use in New Zealand).
New Zealand	Sample Demographic	Hotel, lodge, motor inn 30; B&B, hosted accommodation 22; Motel 20; campground 13; Backpacker, hostel 35			
Hobson & Essex [87]	Sample Size ($n =$)	64			
2001	Target Sample	Accommodation managers	Stratified sample survey	Managers attitudes to principles of sustainable development, adoption of sustainable practices, characteristics of the respondents (size of accommodation, price range, type of business, age and length of ownership)	Modest level of adoption of sustainable practices. The reduction of energy consumption was the most widely integrated activity (86%), although usually for cost-cutting reasons. Other popular practices were buying local, low energy light bulbs, encouraging use of public transport, buying recycled products and recycling glass.
UK	Sample Demographic	44 Small (1–10 rooms); 12 Medium (11–50 rooms); 8 Large (>50 rooms)			

Table 2. Cont.

Citation & Location	Sample	Method	Key Variables	Key Findings
Rivera [88]	Sample Size ($n =$)	164	Participation in Certification for Sustainable Tourism (a voluntary environmental program); hotel basic characteristics (e.g., size, location, quality rating, and ownership) (Hotels without certification used as a reference group)	Voluntary environmental programs that include performance-based standards and 3 rd party monitoring may be effective in promoting beyond compliance environmental behaviour when complemented by institutional pressures exerted by government and trade associations. Foreign-owned and multinational subsidiary facilities are not significantly correlated with higher participation and superior environmental performance.
2001	Target Sample	Hotel managers		
Costa Rica	Sample Demographic	Hotel managers from 52 hotels		
Ayuso [89]	Sample Size ($n =$)	30	Perceptions of the sustainable tourism concept; voluntary environmental instruments implemented;	Hotel managing directors have little awareness of business contribution to environmental sustainability. Hotels apply voluntary environmental instruments as a response to the environmental concern of managers and real or potential stakeholder demands.
2006	Target Sample	Hotel managers of Spanish hotels		
Spain	Sample Demographic	3 hotels had fewer than 50 rooms; 14 hotels had between 50 and 300 rooms; and 13 hotels had more than 300 rooms		
Chan & Wong [90]	Sample Size ($n =$)	164	-	Study identified 8 associated motivational factors that may prompt a hotel to adopt the EMS standard—ISO 14001. The motivation for the adoption of the standard is determined more by internal forces than by external ones.
2006	Target Sample	General manager; the EMS manager; Chief engineer of a hotel		
Hong Kong	Sample Demographic	-		
Hall [35]	Sample Size ($n =$)	43	Attitudes and behaviours towards climate change adaptation and mitigation, small firm tourism entrepreneurs	Climate change was regarded as significant in the future but in the short-term ranked well below other business concerns. If enterprises had been affected by extreme weather events attitudes and behaviours towards climate change differed markedly from those unaffected.
2006	Target Sample	Small rural tourism entrepreneurs		
New Zealand	Sample Demographic	-		
Le, Hollenhorst, Harris, McLaughlin & Shook [91]	Sample Size ($n =$)	190	-	Innovation characteristics most influential factors, being highly correlated with the likelihood of adoption of environmentally friendly practices, followed by external environment characteristics.
2006	Target Sample	Hotel managers		
Vietnam	Sample Demographic	-		
Dalton, Lockington & Baldock [92]	Sample Size ($n =$)	108	Attitudes to renewable energy supply (RES), tourism accommodation providers	9.2% of tourist operators surveyed have some form of RES installation, 16% of villas/cabins and 7% of large hotels. 71% of operators expressed interest in RES. Operators believed industry is resistant to implementation due to RES power supply limitations, reliability and economic viability. Large operations more positive than smaller operations
2007	Target Sample	Maintenance manager or manager		
Queensland, Australia	Sample Demographic	7 small hotels, 29 large hotels, 29 lodge, 22 self-catering accommodation, 6 station, 13 villas/cabins		

Table 2. Cont.

Citation & Location	Sample		Method	Key Variables	Key Findings
Erdogan [93]	Sample Size ($n =$)	104	Observation & Interviews	Environmental management practices (Observational); managerial knowledge, attitude and interest in environment and environmental management (Interviews), accommodation type	Small hotels lack the business culture and financial resources to consider environmental policies and practices. Managers do not have an interest nor the technical knowledge for environmental management.
2007	Target Sample	Small-sized Tourism Accommodation			
Turkey	Sample Demographic	5 bungalows, 37 boarding houses, 62 small hotels			
Henderson [94]	Sample Size ($n =$)	-	Textual analysis	Reactions to Indian Ocean tsunami; commitment to CSR, Hotel companies	Several companies expressed concerns about community welfare and the state of the environment and efforts made to promote recovery. Some interest in wider issues of sustainable development, evident in social and environmental relief projects with longer term goals.
2007	Target Sample	Hotels & resorts			
Phuket, Thailand	Sample Demographic	-			
Holcomb, Upchurch & Okumus [95]	Sample Size ($n =$)	10	Content analysis	-	Growing popularity of CSR reporting. Hilton and Accor put greater effort into reporting, however, more could be done.
2007	Target Sample	Top 10 hotel companies as rated by Hotels Magazine			
International	Sample Demographic	-			
Leslie [96]	Sample Size ($n =$)	120	Purposive survey	-	Operators get little information on green practices from government and 'green' organisations. While operators report environmental commitment, this is overshadowed by a pursuit for maximum financial returns
2007	Target Sample	Accommodation enterprises			
England	Sample Demographic	-			
Graci & Dodds [97]	Sample Size ($n =$)	-	Literature review	-	Reviews reasons for hotel adoption of green practices: cost savings, image, employee loyalty, customer retention, regulatory compliance, risk management, social responsibility, & industry future.
2008	Target Sample	-			
Canada	Sample Demographic	-			
McNamara & Gibson [98]	Sample Size ($n =$)	536	Purposive survey	-	Larger facilities were more likely to have implemented environmental initiatives because of greater capital. Some regions had higher environmental initiative implementation rates than others
2008	Target Sample	Accommodation ranging from 10 to 609 rooms (mean = 66), ranging from 2 m to 1000m from the coastline (mean = 272 m)			
Australia	Sample Demographic	33% Apartments/units, 26% motels/lodges, 12% resorts, 11% hotels			
Graci [99]	Sample Size ($n =$)	100	Purposive interviews	-	Main barriers to implementing sustainable practices: inadequate resources; corporate culture; government bureaucracy; lack of environmental awareness amongst stakeholders
2009	Target Sample	Senior hotel managers			
China	Sample Demographic	-			

Table 2. Cont.

Citation & Location	Sample	Method	Key Variables	Key Findings
Richins & Scarinci [100]	Sample Size ($n =$)	3		
2009	Target Sample	Green certified hotels	Case Study	Water conservation, energy efficiency, waste reduction, clean air and communication were common practices, e.g., recycling programmes; low flow faucets, dimmer switches, window tinting, energy efficient lights bulbs; linen and towel reuse programmes.
Florida, USA	Sample Demographic	Green certified hotels in Florida		
Ryan & Stewart [101]	Sample Size ($n =$)	1		
2009	Target Sample	Luxury Hotel (Al Maha)	Case Study	While the hotel is aiding biodiversity efforts in the local area, the water and energy use is substantial. Hotel a poor fit with the conceptual model of ecotourism.
Dubai, UAE	Sample Demographics	-		
Sloan, Legrand, Tooman & Fendt [102]	Sample Size ($n =$)	11		
2009	Target Sample	German and Estonian Hotels	Interview	The majority of hotels reported that they achieved cost savings and increased market share through implementing sustainable technologies. Employees played a crucial role in the implementation and maintenance of sustainable practices.
Germany & Estonia	Sample Demographic	-		
Dief & Font [103]	Sample Size ($n =$)	89		
2010	Target Sample	Marketing managers of 3, 4 and 5 star green hotels	Random survey	Managers who are younger, and whose company is not overly profit-orientated, tend to engage more in green marketing practices.
Egypt	Sample Demographic	-		
Jackson [104]	Sample Size ($n =$)	23		
2010	Target Sample	Management staff of certified green hotels	Interviews & content analysis	Green aspects include fixtures, facilities, supplies, amenities, equipment, services, consumables and practices. Green practices and values need to be communicated and accepted by members of the supply chain.
USA	Sample Demographic	Supply chain managers 70% female		
Nelson [105]	Sample Size ($n =$)	50 websites		
2010	Target Sample	Accommodation eco-certified by Ecotourism Australia	Content analysis	Information provided online on energy based environmental practices, presentation of information motivations for presenting environmental information
Australia	Sample Demographic	-		
Prayag, Dookhony-Ramphul & Maryeven [106]	Sample Size ($n =$)	90		
2010	Target Sample	Hotel operators in Mauritius	Survey	Perceived environmental, cultural, economic and social impacts of hotel development
Mauritius	Sample Demographic	Average hotel studied had been in operation for 22 years, had 153 room and employed 236 staff		
				Respondents believed hotels should contribute to environmental sustainability and help create positive economic, social and cultural impacts. They did not perceive that hotel development caused negative impacts.

Table 2. Cont.

Citation & Location	Sample	Method	Key Variables	Key Findings	
Lopez-Gamero, Claver-Cortes & Molina-Azorin [107]	Sample Size ($n =$)	Survey	Perception of environmental initiatives to create competitive advantage, attitudes toward the natural environment, the resources of the firm, uncertainty of environmental policies, industry barriers, environmental legislation (voluntary and compulsory), stakeholders	Managers respond better to voluntary industry norms than legislation; stakeholder pressure seems to have a negative effect on managers' perceptions of sustainability as a competitive advantage	
2011	Target Sample				239
Spain	Sample Demographic				Senior hotel managers 59.3% 3 star hotels, 36.1% 4 star hotels & 4.67% 5 star hotels. 41% of hotels chain affiliated. Average of 48 employees and 130 rooms
Smerecnik & Andersen [108]	Sample Size ($n =$)	Convenience survey	Perceived opinion leadership, perceived advantage of environmental sustainability, simplicity of adoptions, perceived innovativeness of business, sustainability innovations adopted	The simplicity of implementing and operating sustainability innovations was biggest predictor of adoption along with the seniority of opinion leadership. General innovativeness and the perceived advantage of a sustainable innovation is a moderate predictor of adoption.	
2011	Target Sample				49
USA	Sample Demographic				Environmental managers of major hotels and ski resorts Average staff 304. 45% 4 star resorts, 53% independent
Tortella & Tirado [109]	Sample Size ($n =$)	Survey	Total hotel water consumption, number of rooms, average occupation level, seasonality, existence of water intensive facilities such as swimming pools and golf courses, their chain affiliation.	Those hotels with lower quality and higher seasonality were more efficient than those higher quality and lower seasonality. Large chain affiliated hotels use the most water.	
2011	Target Sample				196
Mallorca, Spain	Sample Demographic				Hotel managers in Mallorca 35.4% of hotels were 4 star or better
Fernández-Alles & Cuadrado-Marqués [110]	Sample Size ($n =$)	Case study	-	The hotel is socially responsible due to its managerial staff actively taking into account the different stakeholders linked to its economic, social, or environmental performance.	
2012	Target Sample				1
Cadiz Province, Spain	Sample Demographic				Hotel Playa Victoria
Kleinrichert, Ergul, Johnson & Uydaci [111]	Sample Size ($n =$)	Content analysis	Environmental management systems used, location (Istanbul or San Francisco)	San Francisco hoteliers emphasised compliance with LEED certification in online marketing. Istanbul hotel websites were less specific, advertising compliance with a range of programmes.	
2012	Target Sample				10
San Francisco, USA & Istanbul, Turkey	Sample Demographic				Boutique hotels

Table 2. Cont.

Citation & Location	Sample	Method	Key Variables	Key Findings	
Nicholls & Kang [112]	Sample Size ($n =$)	217			
2012	Target Sample	Owners and managers of Michigan lodges			
Michigan, USA	Sample Demographic	25% B&B, 24% cottage, 16% three star hotel, 13% motel. 86% independently owned and operated, 72% of respondents in rural area.	Survey (derived from database of local lodging providers)	Familiarity with green schemes, their participation in environmental programmes, adoption of green practices perceived benefits of green schemes, property characteristics; type of ownership, location & size. The presence of written environmental policy	Low familiarity of green programmes although higher among chain-affiliated and urban property owners. Urban and chain affiliated property owners had a more positive perception of benefits of green business practices. Large properties were more likely to use green messages in their promotions. Written policy not a strong predictor of adoption of many basic green practices.
Oreja-Rodriguez & Armas-Cruz [113]	Sample Size ($n =$)	187			
2012	Target Sample	Environmental managers of hotels			
Canary Islands, Spain	Sample Demographic	56% 4 star hotels, 28% 3 star, 10% 5 star	Census based survey	The environmental managers perception of the environmental performance of the firm according to an 13 point environmental performance or 'EP' construct, hotel type, and quality	Validates use of a 13 point EP construct that can be used to measure and compare the relative EP of hotels. The construct is split into prevention, control and communication. Hotels performed best in the environmental control category and worst in environmental communication and training.
Sanchez-Ollero, Garcia-Pozo & Marchante-Lara [114]	Sample Size ($n =$)	216			
2012	Target Sample	Hotel database of Andalusia			
Andalusia, Spain	Sample Demographic	91 classified as 3 star, 116 as 4 star, and 9 as 5 star	Convenience survey	Economic performance/business strategy, competitive positioning	Strategies that make clients aware of environmental measures implemented by hotels may improve occupancy levels, and increase sales and added value.
Zhang, Joglekar & Verma [115]	Sample Size ($n =$)	984			
2012	Target Sample	US Hotels			
USA	Sample Demographics	US hotel properties' operating statements from 2001 to 2006	Panel data set	-	A positive link exists between environmental and operating performance. The performance frontier varies across market segment and location characteristics.
Becken [116]	Sample Size ($n =$)	242			
2013	Target Sample	Members of the Tourism Industry Association			
New Zealand	Sample Demographic	Most businesses were campgrounds and B&Bs	Convenience survey	Implementation of energy saving initiatives, perceptions of energy saving initiatives	The results identify that there is a substantial gap between the positive perceptions held by operators and levels of implementation.

Table 2. Cont.

Citation & Location	Sample	Method	Key Variables	Key Findings
Chan [56]	Sample Size ($n =$)	55	Convenience survey	Lower-grade hotels tend to adopt lean green marketing strategies, hotels with larger sizes or environmental management systems are likely to adopt shaded or extreme green marketing strategies.
2013	Target Sample	Hotel managers		
Hong Kong	Sample Demographic	61% male 71% 30–49 age group		
Fotiadis, Vassiliadis & Rekleitis [117]	Sample Size ($n =$)	84	Random survey	Reasons that inhibit the adoption of sustainability practices for small-hotel entrepreneurs are the high cost of investment and the uncertain payment of the associated cost.
2013	Target Sample	Hotels listed on the Greek Chamber of Hotels website		
Greece	Sample Demographic	“Mostly men, 50–59 years old, educated”		
Su, Hall & Ozanne [118]	Sample Size ($n =$)	45	Convenience survey	High awareness of climate change and its negative impacts on industry, but conservative attitudes towards legislation and responsibilities.
2013	Target Sample	Hotels in Taiwan		
Taiwan	Sample Demographic	25 chain hotels, 20 independent hotels		
Wyngaard & De Lange [119]	Sample Size ($n =$)	36	Convenience survey	Earthworm farms are able to reduce the amount of food waste that reaches landfills. The direct reuse of harvested rainwater irrigates hotel gardens during summer, decreasing pressure on supplies
2013	Target Sample	Hotels situated in the City Centre, Atlantic Seaboard and Foreshore		
Cape Town, South Africa	Sample Demographic	18 from Food and Beverage departments, 18 from Room division		
Ali, Mashal, Mohsen & Mustafa [120]	Sample Size ($n =$)	98	Stratified sampling survey	Classified hotels show a higher level of concern toward protecting the environment, particularly 5 star hotels. Regardless of classification, the focus is on water and energy saving procedures.
2014	Target Sample	Hotels		
Jordan	Sample Demographic	8 one star, 15 two star, 24 three star, 18 4 star, 15 five star		

Table 2. Cont.

Citation & Location	Sample	Method	Key Variables	Key Findings
Cherapanukorn & Focken [121]	Sample Size ($n =$)	10	Content analysis	Most of the hotel groups report about CSR activities in a detailed way except for Aman Resorts.
2014	Target Sample	Hotel websites		
Asia	Sample Demographic	Top 10 Asian Luxury hotel brands		
Coles, Zschiegner & Dinan [122]	Sample Size ($n =$)	417	Survey (Invited to participate by regional tourism board from the board's database. Randomly selected by board)	Over 80% of respondents believe that responding to climate change is the morally right thing to do. Over 70% recognised the competitive advantages of environmental management. Environmental management was the third most important business priority in the next 3 years.
2014	Target Sample	Accommodation providers		
South-west England	Sample Demographic	B&B (14.1%), full service hotels (3.6%), farmhouses (3.4%), general self-catering (27.6%), guest accommodation (28.3%).		
de-Miguel-Molina, de-Miguel-Molina & Rumiche-Sosa [123]	Sample Size ($n =$)	61	Convenience survey	Deluxe resorts with high sustainable management levels are willing to sacrifice activities and services. Resorts with high sustainable image levels are less predisposed to sacrificing services and activities.
2014	Target Sample	Hotel Managers		
French Polynesia, the Seychelles and the Maldives	Sample Demographic	7 from French Polynesia, 14 from the Seychelles, and 40 from the Maldives		
Garcia-Pozo & Sanchez-Ollero & Marchante-Mera [124]	Sample Size ($n =$)	106	Survey	Implementation of green practices can increase labour productivity by 6.15%–7.51%.
2014	Target Sample	Hotels		
Andalusia, Spain	Sample Demographic	96 4-star, 10 5-star		
Mackenzie & Peters [125]	Sample Size ($n =$)	52	Purposive interviews	Firm size strongly influences the level of CSR integration in organisations. Small hotels oriented towards short-term goals, larger hotels use CSR as a marketing tool. Effective CSR needs recognition in mission statements. Role modeling leads to stronger CSR implementation.
2014	Target Sample	HRM's from high-tier and mid-tier hotels, members of the Hong Kong Hotels Association		
Hong Kong	Sample Demographic	8 female, 4 male participants		
Tsai, Wu & Wang [126]	Sample Size ($n =$)	246	Quota survey	Managers of hotels have significantly higher green hotel attitudes than travel agencies. The difference is highest in "energy conservation" and "cognitive attitude in knowledge".
2014	Target Sample	Hotel managers and travel agency managers		
Taiwan	Sample Demographic	132 hoteliers, 114 travel agency managers		

The most common study location by region was Asia, with 36.1% of all of the papers being carried out there. Europe follows with 19.6% of the studies, and the least popular study locations were Africa (5.2%), the Middle East (3.1%), and South America (2.1%). Table 3 provides a more detailed breakdown by country and shows that the USA, Taiwan, and Spain have been the most studied locations. The relative lack of research in Africa and South America is reflective of the overall amount of climate change related tourism research noted in IPCC reports [18,127]. However, this is not the case with Asia in which there is very limited reporting in IPCC reports [18,128], although there is a growing interest from researchers and institutions, such as the UNWTO [127].

Table 3. Study locations in papers.

Country/Region	Consumer	Producer	Total	Country/Region	Consumer	Producer	Total
Asia	0	1	1	Jordan	0	1	1
Australia	3	4	7	Korea	1	0	1
Austria	1	0	1	Malaysia	2	0	2
Belize	1	0	1	Maldives	0	1	1
Brazil	0	1	1	Mauritius	0	1	1
Canada	3	2	5	Nepal	1	0	1
Canary Islands	0	1	1	New Zealand	1	3	4
China	3	1	4	Portugal	1	0	1
Costa Rica	0	1	1	Seychelles	0	1	1
Crete	1	0	1	Slovenia	2	0	2
Egypt	0	1	1	South Africa	0	1	1
England	0	2	2	Spain	0	7	7
Estonia	0	1	1	Sri Lanka	1	0	1
French Polynesia	0	1	1	Taiwan	6	4	10
Germany	0	1	1	Thailand	0	1	1
Ghana	1	0	1	Turkey	0	2	2
Global	1	1	2	United Arab Emirates	0	1	1
Greece	2	1	3	UK	0	1	1
Hong Kong	4	4	8	USA	12	6	18
India	1	1	2	Vietnam	0	1	1
				Total	44	56	104

With respect to accommodation types, hotels were specifically focused upon in over 70% of the studies, and were also studied in conjunction with other accommodation types (Table 4). Research was therefore focussed on formal accommodation businesses. All research that looked at the perceptions, attitudes and knowledge of employees was conducted in the formal hotel sector. There was therefore only limited research on other forms of lodging, such as self-catering accommodation and B&Bs, even though these may be significant in many destination contexts. No studies of second homes were included in the papers that were reviewed even though their contribution to tourist bed-nights and resource use as self-catering or rental accommodation is extremely significant for many destinations [129,130].

In terms of methods, the most common data collection method of all of the studies were questionnaires or surveys (Table 5). Over two-thirds of the studies were based primarily on questionnaires/surveys, one study combined surveys with focus groups and another with interviews. One paper also utilised panel data. The next most common research method was interviews (eight papers) sometimes in conjunction with by case studies and content analysis. One of the clear limits in the data set is the lack of quantitative analysis of actual reductions in energy or water use, or waste in conjunction with research on attitudes and behaviours.

Table 4. Accommodation type studied in paper.

Type	Consumer	Producer		Total
		Owners & Managers	Employees	
Hotel*	27	34	5	65*
Non-specified (Lodging in general)	13	0	0	13
Complete range of accommodation and lodging providers (e.g., hotels, lodges, self-catering, cabins, B&Bs, farmstays)	1	6	0	7
Certified accommodation (e.g., ecolodge, green hotel)	1	1	0	2
Hotels and cabins	1	0	0	0
Small-sized tourism accommodation	0	1	0	1
Backpackers*	1	1	0	1*
Hotels and ski resorts	0	1	0	1
Resort	1	0	0	1
Rural accommodation businesses	0	1	0	1
Total	45	45	5	
Total number of papers				93*

* Includes studies examining both consumer and producer dimensions.

Table 5. Primary research method.

Primary Research method	Consumer	Producer		Total
		Owners & Managers	Employees	
Survey or Questionnaire	37	27	3	30
Interview	3	4	0	7
Case Study	0	3	2	5
Content Analysis	0	4	0	4
Experiment	2	0	0	0
Observation and Interviews	0	2	0	2
Factorial Experimental Design	1	0	0	0
Survey and Focus Group	1	0	0	0
Interview and Survey	0	1	0	1
Interviews and Content Analysis	0	1	0	1
Literature Review only	0	1	0	1
Textual Analysis	0	1	0	1
Panel Data Set	0	1	0	1
Total	45	45	5	
Total number of papers				93*

* Two studies examined both consumer and producer dimensions.

Sampling methods were more dispersed across the studies (Table 6). The most common sampling method was based on convenience (36 studies). Twelve consumer related studies used the intercept method. Purposive sampling was used with the second most widely used method with producer related studies. However, many studies did not state their sample method.

Table 6. Stated sampling method.

Sample Method	Consumer	Producer		Total
		Owners & Managers	Employees	
Convenience	22	13	3	38
Intercept	11	0	0	1
Purposive	1	6	2	9
Random	5	3	0	8
Stratified	0	4	0	4
Judgment	1	2	0	3
Census	0	2	0	2
Snowball	0	1	0	1
Quota	1	1	0	2
Random and intercept	1	0	0	1
Quasi-random	1	0	0	1
Systematic random sampling	0	1	0	1
Unstated/unclear	2	12	0	14
Total	45	45	5	
Total number of papers				93*

* Two studies examined both consumer and producer dimensions.

The sample size of the studies with respect to the number of respondents ranged from one to 2308 (Table 7). Those studies with a very small sample size were usually hotel case studies. Studies with larger sample sizes consisted of questionnaires or surveys.

Table 7. Sample size of studies (number of respondents).

Sample Size	Consumer		Producer		Total
		Owners & Managers	Employees		
0–50	2	14	1		17
51–100	2	9	1		12
101–150	3	5	0		8
151–200	2	6	0		8
201–250	5	5	0		10
251–300	3	0	1		4
301–350	3	0	0		3
351–400	3	0	1		4
401–450	3	1	0		4
451–500	4	0	0		4
501–600	2	1	0		3
601–700	3	0	0		3
701–800	0	0	0		0
801–900	1	0	0		1
901–1000	1	1	0		2
1001–1500	5	0	0		5
1501–2000	0	0	0		0
2001–2500	1	0	0		1
2501–3000	0	0	0		0
3001–3500	0	0	0		0
3501–4000	0	0	0		0
4001–4500	0	0	0		0
4501–5000	1	0	0		1
Not provided	1	4	1		6
Total	45	45	5		
Total papers					93*

* Two studies examined both consumer and producer dimensions.

4. Discussion and Conclusion

Several studies found that individuals who already participated in general pro-environmental behaviour or consumption practices were more likely to choose to stay at a green hotel, over those who did not [67,76]. A consumer's "green" attitude is therefore a key mediator of their intention to stay at a green hotel [77]. However, context is also important. Although normative motives are the dominant determinant of pro-environmental behaviour in a household setting, hedonic motives appear a stronger predictor of such behaviour in a hotel setting [62]. Some studies observed that because green hotel rooms are often more expensive than non-green hotels, higher income bracket consumers are more likely to stay at green hotels, while consumers have reported being willing to pay a 1.5%–6% premium for green hotels [39,41,53], although the long-term maintenance of such premiums is unknown given the widespread adoption of at least some sustainability measures, e.g., reuse of towels, by lodging properties. Those consumers with a higher knowledge of green hotels and their practices were more likely to stay in them [52], although experiences of sustainable practices may have a positive effect on environmental attitudes and behaviours [37,60]. Nevertheless, there were some papers that observed a gap between consumers' intentions to stay at green hotel and their actions to do so [43]. The most common sustainable hotel practices that customers appeared to value and think of were the use of recycle bins and recycled products, as well as reusable towel and linen schemes [39,47,63]. Inconvenience remains a powerful barrier to consumers in adopting sustainable practices in hotels [67].

Firm size appears to have a significant impact on the sustainable practices of accommodation operations [56,92,112,118,120]. Larger hotels implement more effective and longer-term green initiatives [98,125]. This was mainly due to a high level of capital, and a strong business culture, and with some evidence of the importance of being part of an international chain for which sustainability is being incorporated in brand values as well as CSR initiatives [118]. Although other studies found that foreign-owned and multinational subsidiary firms were not significantly correlated with higher participation in sustainable certification schemes and superior environmental performance [88]. Regulatory and cultural context is therefore clearly significant [3,7]. Barriers to implementing sustainable practices were noted as being inadequate resources, level of investment, lack of awareness amongst stakeholder, and the pressure to make maximum financial returns [99]. Perhaps not surprisingly, the Internet and social media are noted as an important channel to communicate hotels' green initiatives [81], while hotel employees' and managers' knowledge and attitudes were regarded as essential to the implementation and success of green initiatives [102]. Although, it should be noted that the amount of studies that looked at employees' attitudes and behaviours as compared to that of managers and owners was extremely limited. Furthermore, there is little research that actually looked at implementation practices and measured changes in indicators of sustainability, rather than relying on self-reporting and perceptions of change. In the New Zealand context, a substantial gap was reported between the positive perceptions held by operators of their energy saving initiatives and actual levels of implementation [116].

Hotels' most common green practices appeared to be water conservation, energy efficiency and waste reduction [100,120], and they were known to adopt these practices due to cost savings, response to environmental concerns and when there was simplicity in implementing and operating sustainable practices [97,102,117]. Although not a central research focus, there is also limited evidence that accommodation and lodging businesses were more likely to be positive towards green practices if their area had been affected by a natural disaster or extreme weather conditions [35].

This systematic review on the behaviour and attitudes of consumers and producers towards sustainable accommodation has indicated a number of significant issues in the conduct of research. The English language literature is geographically and culturally uneven with few papers from Africa and South America and with most from the United States, Hong Kong, and Taiwan. The majority of studies used surveys or questionnaires as their main form of data collection, and the most common sampling method used was convenience sampling. There is relatively little duplication in the survey questions used in different studies which makes accurate comparisons between the results of papers difficult. Even more concerning, only one longitudinal study had been conducted which raises a number of issues regarding the tracking of consumer and lodging provider behaviour change. There is clearly substantial need for monitoring material flows over time while simultaneously tracking the attitudes of managers, staff and customers as well as the impacts of new technologies and interventions so as to develop a more comprehensive understanding of the interplay between the various activities that can lead to positive change. Similarly, there are few studies that clearly indicate the results of any intervention into influencing consumptive behaviour and none of these are tracked over time—the assumption clearly being made that changes in messaging, for example, will be maintained as the resultant behaviours have become new norms, even if those messages may then be removed from hotel rooms. Such long-term tracking is essential, for example, to compare the value of norm and non-norm approaches to encouraging customer behaviours [42,70], while the potential value of norm-based approaches for staff and managers is also a potentially significant area of study [82]. However, it must be emphasised that norm-based approaches, while having significant potential, also need to be examined in a far wider cultural context than what has so far been the case. In addition, there is insufficient reporting of the actual changes to quantities of energy, food and water consumed, or the production of waste which any intervention has influenced. We do not know, for example, whether any rebound effects have occurred so that reductions in consumption and/or waste in one area of an organisation have been accompanied by increases elsewhere [131].

A clear outcome of the study therefore is that there is a greater need for integrated long-term studies of accommodation and lodging firms and their consumers. Although environmental management systems approaches [7], for example, highlight the need for inclusion of all stakeholders in improving system sustainability, this is not reflected in the literature. Only five studies included lower level employees in assessments of sustainable behaviour and practices [80–84], even though they are the staff who actually implement any intervention. There is therefore a clear need for studies that seek to compare not only the attitude and behaviour gaps within stakeholder groups, such as consumers and managers, but also between such groups, and then seek to chart how practices change and are maintained over time in light of any differences in physical infrastructure and/or behavioural interventions.

Acknowledgments: The willingness of Stefan Gössling, Paul Peeters, Yael Ram and Daniel Scott to comment on the appropriateness of search terms is gratefully acknowledged.

Author Contributions: Colin Michael Hall and Leroy Paul-Andrews conceived and designed the systematic analysis; Colin Michael Hall, Natasha Dayal, Dea Majstorović, Hamish Mills, Leroy Paul-Andrews and Chloe Wallace performed the systematic analysis; Colin Michael Hall, Natasha Dayal, Dea Majstorović, Hamish Mills, Leroy Paul-Andrews and Chloe Wallace analyzed the data; Colin Michael Hall, Natasha Dayal, Dea Majstorović, Hamish Mills, Leroy Paul-Andrews, Chloe Wallace and Van Dao Truong wrote the paper.

Conflicts of Interest: The authors declare no conflict of interest.

References

- Hall, C.M.; Lew, A. *Understanding and Managing Tourism Impacts: An Integrated Approach*; Routledge: London, UK, 2009.
- Scott, D.; Amelung, B.; Becken, S.; Ceron, J.-P.; Dubois, G.; Gössling, S.; Peeters, P.; Simpson, M. *Climate Change and Tourism: Responding to Global Challenges*; United Nations World Tourism Organisation, United Nations Environment Program, World Meteorological Organisation: Madrid, Spain, 2008.
- Gössling, S. *Carbon Management in Tourism: Mitigating the Impacts on Climate Change*; Routledge: London, UK, 2010.
- Gössling, S.; Hall, C.M. Sustainable culinary systems: An introduction. In *Sustainable Culinary Systems: Local Foods, Innovation, and Tourism & Hospitality*; Hall, C.M., Gössling, S., Eds.; Routledge: Abingdon, UK, 2013; pp. 3–44.
- Hall, C.M.; Gössling, S. *Sustainable Culinary Systems: Local Foods, Innovation, and Tourism & Hospitality*; Hall, C.M., Gössling, S., Eds.; Routledge: Abingdon, UK, 2013.
- Kasim, A.; Gursoy, D.; Okumus, F.; Wong, A. The importance of water management in hotels: A framework for sustainability through innovation. *J. Sustain. Tour.* **2014**, *22*, 1090–1107. [[CrossRef](#)]
- Gössling, S.; Hall, C.M.; Scott, D. *Tourism and Water*; Channel View: Bristol, UK, 2015.
- Ayuso, S. Comparing voluntary policy instruments for sustainable tourism: The experience of the Spanish hotel sector. *J. Sustain. Tour.* **2007**, *15*, 144–159. [[CrossRef](#)]
- Kasim, A. Corporate environmentalism in the hotel sector: Evidence of drivers and barriers in Penang, Malaysia. *J. Sustain. Tour.* **2007**, *15*, 680–699. [[CrossRef](#)]
- Kasim, A. Towards a wider adoption of environmental responsibility in the hotel sector. *Int. J. Hosp. Tour. Adm.* **2007**, *8*, 25–49. [[CrossRef](#)]
- Ali, Y.; Mustafa, M.; Al-Mashaqbah, S.; Mashal, K.; Mohsen, M. Potential of energy savings in the hotel sector in Jordan. *Energy Convers. Manag.* **2008**, *49*, 3391–3397. [[CrossRef](#)]
- Zografakis, N.; Gillas, K.; Pollaki, A.; Profylienou, M.; Bounialetou, F.; Tsagarakis, K.P. Assessment of practices and technologies of energy saving and renewable energy sources in hotels in Crete. *Renew. Energy* **2011**, *36*, 1323–1328. [[CrossRef](#)]
- Cashman, A.; Moore, W. A market-based proposal for encouraging water use efficiency in a tourism-based economy. *Int. J. Hosp. Manag.* **2012**, *31*, 286–294. [[CrossRef](#)]
- World Economic Forum. *Towards a Low Carbon Travel & Tourism Sector*; World Economic Forum: Gland, Switzerland, 2009.
- Hall, C.M. Degrowing tourism: Décroissance, sustainable consumption and steady-state tourism. *Anatolia* **2009**, *20*, 46–61. [[CrossRef](#)]

16. Gössling, S.; Peeters, P. Assessing tourism's global environmental impact 1900–2050. *J. Sustain. Tour.* **2015**, *23*, 639–659. [[CrossRef](#)]
17. Scott, D.; Gössling, S.; Hall, C.M.; Peeters, P. Can tourism be part of the decarbonized global economy? The costs and risks of carbon reduction pathways. *J. Sustain. Tour.* **2016**, *24*, 52–72.
18. Scott, D.; Hall, C.M.; Gössling, S. A review of the IPCC 5th Assessment and implications for tourism sector climate resilience and decarbonisation. *J. Sustain. Tour.* **2016**, *24*, 8–30.
19. Scott, D.; Hall, C.M.; Gössling, S. A report on the Paris Climate Change Agreement and its implications for tourism: Why we will always have Paris. *J. Sustain. Tour.* **2016**. [[CrossRef](#)]
20. Truong, V.D.; Hall, C.M. Social marketing and tourism: what is the evidence? *Soc. Mark. Q.* **2013**, *19*, 110–135. [[CrossRef](#)]
21. Truong, V.D.; Hall, C.M. Corporate social marketing in tourism: To sleep or not to sleep with the enemy? *J. Sustain. Tour.* **1994**, *15*, 435–443.
22. Hall, C.M. Framing behavioural approaches to understanding and governing sustainable tourism consumption: Beyond neoliberalism, 'nudging' and 'green growth'? *J. Sustain. Tour.* **2013**, *21*, 1091–1109. [[CrossRef](#)]
23. Hall, C.M. *Tourism and Social Marketing*; Routledge: Abingdon, UK, 2014.
24. Hall, C.M. Intervening in academic interventions: Framing social marketing's potential for successful sustainable tourism behavioural change. *J. Sustain. Tour.* **2016**, *24*, 350–375. [[CrossRef](#)]
25. Luchs, M.G.; Naylor, R.W.; Irwin, J.R.; Raghunathan, R. The sustainability liability: Potential negative effects of ethicality on product preference. *J. Mark.* **2010**, *74*, 18–31. [[CrossRef](#)]
26. Gössling, S.; Scott, D.; Hall, C.M.; Ceron, J.-P.; Dubois, G. Consumer behaviour and demand response of tourists to climate change. *Ann. Tour. Res.* **2012**, *39*, 36–58.
27. Cohen, S.A.; Higham, J.E.; Gössling, S.; Peeters, P. *Understanding and Governing Sustainable Tourism Mobility: Psychological and Behavioural Approaches*; Cohen, S.A., Higham, J.E., Gössling, S., Peeters, P., Eds.; Routledge: Abingdon, UK, 2014.
28. Ong, L.T.A.; Smith, R.A. Perception and reality of managing sustainable coastal tourism in emerging destinations: the case of Sihanoukville, Cambodia. *J. Sustain. Tour.* **2014**, *22*, 256–278.
29. Teng, C.; Horng, J.; Hu, I. Hotel environmental management decisions: The stakeholder perspective. *Int. J. Hosp. Tour. Adm.* **2015**, *16*, 79–98. [[CrossRef](#)]
30. Russell, L.B.; Gold, M.R.; Siegel, J.E.; Daniels, N.; Weinstein, M.C. The role of cost-effectiveness analysis in health and medicine. *J. Am. Med. Assoc.* **1996**, *276*, 1172–1177. [[CrossRef](#)]
31. Weed, M. Sports tourism research 2000–2004: A systematic review of knowledge and a meta-evaluation of methods. *J. Sport Tour.* **2006**, *11*, 5–30. [[CrossRef](#)]
32. Liberati, A.; Altman, D.G.; Tetzlaff, J.; Mulrow, C.; Gøtzsche, P.C.; Ioannidis, J.P.; Clarke, M.; Devereaux, P.; Kleijnen, J.; Moher, D. The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate health care interventions: Explanation and elaboration. *Ann. Intern. Med.* **2009**, *151*, W-65. [[CrossRef](#)]
33. Moher, D.; Liberati, A.; Tetzlaff, J.; Altman, D.G. Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement. *Ann. Intern. Med.* **2009**, *151*, 264–269. [[CrossRef](#)] [[PubMed](#)]
34. Firth, T.; Hing, N. Backpacker hostels and their guests: Attitudes and behaviours relating to sustainable tourism. *Tour. Manag.* **1999**, *20*, 251–254. [[CrossRef](#)]
35. Kim, Y.J.; Palakurthi, R.; Hancer, M. The environmentally friendly programs in hotels and customers' intention to stay: An online survey approach. *Int. J. Hosp. Tour. Adm.* **2012**, *13*, 195–214. [[CrossRef](#)]
36. Hall, C.M. New Zealand tourism entrepreneur attitudes and behaviours with respect to climate change adaptation and mitigation. *Int. J. Innov. Sustain. Dev.* **2006**, *1*, 229–237. [[CrossRef](#)]
37. Fairweather, J.R.; Maslin, C.; Simmons, D.G. Environmental values and response to ecolabels among international visitors to New Zealand. *J. Sustain. Tour.* **2005**, *13*, 82–98. [[CrossRef](#)]
38. Lee, W.H.; Moscardo, G. Understanding the impact of ecotourism resort experiences on tourists' environmental attitudes and behavioural intentions. *J. Sustain. Tour.* **2005**, *13*, 546–565. [[CrossRef](#)]
39. Chan, J.K.L.; Baum, T. Motivation factors of ecotourists in ecolodge accommodation: The push and pull factors. *Asia Pac. J. Tour. Res.* **2007**, *12*, 349–364. [[CrossRef](#)]
40. Manaktola, K.; Jauhari, V. Exploring consumer attitude and behaviour towards green practices in the lodging industry in India. *Int. J. Contemp. Hosp. Manag.* **2007**, *19*, 364–377.

41. Nepal, S.K. Ecotourists' importance and satisfaction ratings of accommodation-related amenities. *Anatolia* **2007**, *18*, 255–276. [[CrossRef](#)]
42. Dalton, G.J.; Lockington, D.A.; Baldock, T.E. A survey of tourist attitudes renewable energy supply in Australian hotel accommodation. *Renew. Energy* **2008**, *33*, 2174–2185. [[CrossRef](#)]
43. Goldstein, N.; Cialdini, R.; Griskevicius, V. A room with a viewpoint: Using social norms to motivate environmental conservation in hotels. *J. Consum. Res.* **2008**, *35*, 472–482. [[CrossRef](#)]
44. Tsai, C.W.; Tsai, C.P. Impacts of consumer environmental ethics on consumer behaviours in green hotels. *J. Hosp. Leis. Mark.* **2008**, *17*, 284–313.
45. Choi, G.; Parsa, H.G.; Sigala, M.; Putrevu, S. Consumers' environmental concerns and behaviors in the lodging industry: A comparison between Greece and the United States. *J. Qual. Assur. Hosp. Tour.* **2009**, *10*, 93–112. [[CrossRef](#)]
46. Han, H.; Hsu, L.T.J.; Sheu, C. Application of the theory of planned behavior to green hotel choice: Testing the effect of environmental friendly activities. *Tour. Manag.* **2010**, *31*, 325–334. [[CrossRef](#)]
47. Han, H.; Kim, Y. An investigation of green hotel customers' decision formation: Developing an extended model of the theory of planned behavior. *Int. J. Hosp. Manag.* **2010**, *29*, 659–668. [[CrossRef](#)]
48. Kim, Y.; Han, H. Intention to pay conventional-hotel prices at a green hotel—A modification of the theory of planned behavior. *J. Sustain. Tour.* **2010**, *18*, 997–1014. [[CrossRef](#)]
49. Kwan, P.; Eagles, P.; Gebhardt, A. Ecotodge patrons' characteristics and motivations: A study of Belize. *J. Ecotour.* **2010**, *9*, 1–20. [[CrossRef](#)]
50. Lee, J.; Hsu, L.; Han, H.; Kim, Y. Understanding how consumers view green hotels: How a hotel's green image can influence behavioural intentions. *J. Sustain. Tour.* **2010**, *18*, 901–914. [[CrossRef](#)]
51. Tsagarakis, K.P.; Bounialetou, F.; Gillas, K.; Profylienou, M.; Pollaki, A.; Zografakis, N. Tourists' attitudes for selecting accommodation with investments in renewable energy and energy saving systems. *Renew. Sustain. Energy Rev.* **2011**, *15*, 1335–1342. [[CrossRef](#)]
52. Bastic, M.; Gojic, S. Measurement scale for eco-component of hotel service quality. *Int. J. Hosp. Manag.* **2012**, *31*, 1012–1020. [[CrossRef](#)]
53. Chen, A.; Peng, N. Green hotel knowledge and tourists' staying behavior. *Ann. Tour. Res.* **2012**, *39*, 2211–2216. [[CrossRef](#)]
54. Do Valle, P.O.; Pintassilgo, P.; Matias, A.; André, F. Tourist attitudes towards an accommodation tax earmarked for environmental protection: A survey in the Algarve. *Tour. Manag.* **2012**, *33*, 1408–1416. [[CrossRef](#)]
55. Hu, H. The effectiveness of environmental advertising in the hotel industry. *Cornell Hosp. Q.* **2012**, *53*, 154–164. [[CrossRef](#)]
56. Chan, E.S. Managing green marketing: Hong Kong hotel managers' perspective. *Int. J. Hosp. Manag.* **2013**, *34*, 442–461. [[CrossRef](#)]
57. Ham, S.; Han, H. Role of perceived fit with hotels' green practices in the formation of customer loyalty: Impact of environmental concerns. *Asia Pac. J. Tour. Res.* **2013**, *18*, 731–748. [[CrossRef](#)]
58. Han, X.; Chan, K. Perception of green hotels among tourists in Hong Kong: An exploratory study. *Serv. Mark. Q.* **2013**, *34*, 339–352. [[CrossRef](#)]
59. Kucukusta, D.; Mak, A.; Chan, X. Corporate social responsibility practices in four and five-star hotels: Perspectives from Hong Kong visitors. *Int. J. Hosp. Manag.* **2013**, *34*, 19–30. [[CrossRef](#)]
60. MacIntosh, E.; Apostolis, N.; Walker, M. Environmental responsibility: Internal motives and customer expectations of a winter sport provider. *J. Sport Tour.* **2013**, *18*, 99–116. [[CrossRef](#)]
61. Mensah, I.; Mensah, R.D. International tourists' environmental attitude towards hotels in Accra. *Int. Acad. Res. Bus. Soc. Sci.* **2013**, *3*, 444–455.
62. Miao, L.; Wei, W. Consumers' pro-environmental behaviour and the underlying motivations: A comparison between household and hotel settings. *Int. J. Hosp. Manag.* **2013**, *32*, 102–112. [[CrossRef](#)]
63. Millar, M.; Mayer, K.; Baloglu, S. Importance of green hotel attributes to business and leisure travelers. *J. Hosp. Market. Manag.* **2013**, *21*, 395–413. [[CrossRef](#)]
64. Miththapala, S.; Jayawardena, C.; Mudadeniya, D. Responding to trends: Environmentally-friendly sustainable operations (ESO) of Sri Lankan hotels. *Worldw. Hosp. Tour. Themes* **2013**, *5*, 442–455.

65. Prud'homme, B.; Raymond, L. Sustainable development practices in the hospitality industry: An empirical study of their impact on customer satisfaction and intentions. *Int. J. Hosp. Manag.* **2013**, *34*, 116–126. [[CrossRef](#)]
66. Slevitch, L.; Mathe, K.; Karpova, E.; Scott-Halsell, S. "Green" attributes and customer satisfaction: Optimization of resource allocation and performance. *Int. J. Contemp. Hosp. Manag.* **2013**, *25*, 802–822. [[CrossRef](#)]
67. Baker, M.A.; Davis, E.A.; Weaver, P.A. Eco-friendly attitudes, barriers to participation, and differences in behavior at green hotels. *Cornell Hosp. Q.* **2014**, *55*, 88–99. [[CrossRef](#)]
68. Chan, K.; Han, X. Effectiveness of environmental advertising for hotels. *Serv. Mark. Q.* **2014**, *35*, 289–303. [[CrossRef](#)]
69. Chang, L.; Tsai, C.; Yeh, S. Evaluation of green hotel guests' behavioural intention. *Adv. Hosp. Leis.* **2014**, *10*, 75–89.
70. Chen, M.; Tung, P. Developing an extended theory of planned behaviour model to predict consumers' intention to visit green hotels. *Int. J. Hosp. Manag.* **2014**, *36*, 221–230. [[CrossRef](#)]
71. Chia-Jung, C.; Pei-Chun, C. Preferences and willingness to pay for green hotel attributes in tourist choice behaviour: The case of Taiwan. *J. Travel Tour. Mark.* **2014**, *31*, 937–957. [[CrossRef](#)]
72. Esparon, M.; Gyuris, E.; Stoeckl, N. Does ECO certification deliver benefits? An empirical investigation of visitors' perceptions of the importance of ECO certification's attributes and of operators' performance. *J. Sustain. Tour.* **2014**, *22*, 148–169.
73. Horng, J.; Hu, M.; Teng, C.; Lin, L. Energy saving and carbon reduction behaviours in tourism—A perception study of Asian visitors from a protection motivation theory perspective. *Asia Pac. J. Tour. Res.* **2014**, *6*, 721–735. [[CrossRef](#)]
74. Huang, H.C.; Lin, T.H.; Lai, M.C.; Lin, T.L. Environmental consciousness and green customer behavior: An examination of motivation crowding effect. *Int. J. Hosp. Manag.* **2014**, *40*, 139–149. [[CrossRef](#)]
75. Liu, M.; Wong, I.; Shi, G.; Chu, R.; Brock, J. The impact of corporate social responsibility (CSR) performance and perceived brand quality on customer-based brand preference. *J. Serv. Mark.* **2014**, *28*, 181–194.
76. Noor, N.A.M.; Kumar, D. ECO friendly 'activities' VS ECO friendly 'attitude': Travelers intention to choose green hotels in Malaysia. *World Appl. Sci. J.* **2014**, *30*, 506–513.
77. Sirakaya-Turk, E.; Baloglu, S.; Mercado, H.U. The efficacy of sustainability values in predicting travelers' choices for sustainable hospitality businesses. *Cornell Hosp. Q.* **2014**, *55*, 115–126. [[CrossRef](#)]
78. Stumpf, T.; Park, J.; Kim, H.J. Appreciative and consumptive lodging attributes: Conceptualisation and measurement. *Int. J. Hosp. Manag.* **2014**, *40*, 71–80. [[CrossRef](#)]
79. Zupan, S.; Milfelner, B. Social responsibility, motivation and satisfaction: small hotels guests' perspective. *Kybernetes* **2014**, *43*, 513–528.
80. Chan, E.S.; Hawkins, R. Attitude towards EMSs in an international hotel: An exploratory case study. *Int. J. Hosp. Manag.* **2010**, *29*, 641–651. [[CrossRef](#)]
81. Do Paço, A.; Alves, H.; Nunes, C. Ecotourism from both hotels and tourists' perspective. *Econ. Sociol.* **2012**, *5*, 132–142. [[CrossRef](#)] [[PubMed](#)]
82. Chou, C. Hotels' environmental policies and employee personal environmental beliefs: interactions and outcomes. *Tour. Manag.* **2014**, *40*, 436–446. [[CrossRef](#)]
83. Ferus-Comelo, A. CSR as corporate self-reporting in India's tourism industry. *Soc. Responsib. J.* **2014**, *10*, 53–67. [[CrossRef](#)]
84. Teng, C.C.; Horng, J.S.; Hu, M.L.M.; Chen, P.C. Exploring the energy and carbon literacy structure for hospitality and tourism practitioners: Evidence from hotel employees in Taiwan. *Asia Pac. J. Tour. Res.* **2014**, *19*, 451–468. [[CrossRef](#)]
85. Deng, S.L.; Ryan, C.; Moutinho, L. Canadian hoteliers and their attitudes towards environmental issues. *Int. J. Hosp. Manag.* **1992**, *11*, 225–237. [[CrossRef](#)]
86. Becken, S.; Frampton, C.; Simmons, D. Energy consumption patterns in the accommodation sector—The New Zealand case. *Ecol. Econ.* **2001**, *39*, 371–386. [[CrossRef](#)]
87. Hobson, K.; Essex, S. Sustainable tourism: A view from accommodation businesses. *Serv. Ind. J.* **2001**, *21*, 133–146. [[CrossRef](#)]

88. Rivera, J. Does it pay to be green in the developing world? Participation in a Costa Rican voluntary environmental program and its impact on hotels' competitive advantage. *Bus. Strategy Environ.* **2001**, *10*, 176–182.
89. Ayuso, S. Adoption of voluntary environmental tools for sustainable tourism: Analysing the experience of Spanish hotels. *Corp. Soc. Responsib. Environ. Manag.* **2006**, *13*, 207–220. [[CrossRef](#)]
90. Chan, E.S.; Wong, S.C. Motivations for ISO 14001 in the hotel industry. *Tour. Manag.* **2006**, *27*, 481–492. [[CrossRef](#)]
91. Le, Y.; Hollenhorst, S.; Harris, C.; McLaughlin, W.; Shook, S. Environmental management: A study of Vietnamese hotels. *Ann. Tour. Res.* **2006**, *33*, 545–567. [[CrossRef](#)]
92. Dalton, G.J.; Lockington, D.A.; Baldock, T.E. A survey of tourist operator attitudes to renewable energy supply in Queensland, Australia. *Renew. Energy* **2007**, *32*, 567–586. [[CrossRef](#)]
93. Erdogan, N. Environmental management of small-sized tourism accommodations in Turkey. *J. Appl. Sci.* **2007**, *7*, 1124–1130.
94. Henderson, J.C. Corporate social responsibility and tourism: Hotel companies in Phuket, Thailand, after the Indian Ocean tsunami. *Int. J. Hosp. Manag.* **2007**, *26*, 228–239. [[CrossRef](#)]
95. Holcomb, J.L.; Upchurch, R.S.; Okumus, F. Corporate social responsibility: What are top hotel companies reporting? *Int. J. Contemp. Hosp. Manag.* **2007**, *19*, 461–475. [[CrossRef](#)]
96. Leslie, D. The missing component in the 'greening' of tourism: The environmental performance of the self-catering accommodation sector. *Int. J. Hosp. Manag.* **2007**, *26*, 310–322. [[CrossRef](#)]
97. Graci, S.; Dodds, R. Why go green? The business case for environmental commitment in the Canadian hotel industry. *Anatolia* **2008**, *19*, 250–270.
98. McNamara, K.E.; Gibson, C. Environmental sustainability in practice? A macro-scale profile of tourist accommodation facilities in Australia's coastal zone. *J. Sustain. Tour.* **2008**, *16*, 85–100.
99. Graci, S. Examining the factors that impede sustainability in China's tourism accommodation industry: A case study of Sanya, Hainan, China. *J. Hosp. Mark. Manag.* **2009**, *19*, 38–55. [[CrossRef](#)]
100. Richins, H.; Scarinci, J. Climate change and sustainable practices: A case study of the resort industry in Florida. *Tour. Int. Multidiscip. J. Tour.* **2009**, *4*, 107–128.
101. Ryan, C.; Stewart, M. Eco-tourism and luxury—The case of Al Maha, Dubai. *J. Sustain. Tour.* **2009**, *17*, 287–301. [[CrossRef](#)]
102. Sloan, P.; Legrand, W.; Tooman, H.; Fendt, J. Best practices in sustainability: German and Estonian hotels. *Adv. Hosp. Leis.* **2009**, *5*, 89–107.
103. Dief, M.E.; Font, X. The determinants of hotels' marketing managers' green marketing behaviour. *J. Sustain. Tour.* **2010**, *18*, 157–174. [[CrossRef](#)]
104. Jackson, L. Toward a framework for the components of green lodging. *J. Retail Leis. Prop.* **2010**, *9*, 211–230. [[CrossRef](#)]
105. Nelson, V. Promoting energy strategies on eco-certified accommodation websites. *J. Ecotour.* **2010**, *9*, 187–200. [[CrossRef](#)]
106. Prayag, G.; Dookhony-Ramphul, K.; Maryeven, M. Hotel development and tourism impacts in Mauritius: Hoteliers' perspectives on sustainable tourism. *Dev. South. Afr.* **2010**, *27*, 697–712. [[CrossRef](#)]
107. López-Gamero, M.D.; Claver-Cortés, E.; Molina-Azorín, J.F. Environmental perception, management, and competitive opportunity in Spanish hotels. *Cornell Hosp. Q.* **2011**, *52*, 480–500. [[CrossRef](#)]
108. Smerecnik, K.R.; Andersen, P.A. The diffusion of environmental sustainability innovations in North American hotels and ski resorts. *J. Sustain. Tour.* **2011**, *19*, 171–196. [[CrossRef](#)]
109. Tortella, B.D.; Tirado, D. Hotel water consumption at a seasonal mass tourist destination. The case of the island of Mallorca. *J. Environ. Manag.* **2011**, *92*, 2568–2579.
110. Fernández-Alles, M.T.; Cuadrado-Marqués, R. Hotel environmental impact management: A case study in Cádiz Province. In *Soft Computing in Management and Business Economics*; Gil-Lafuente, A.M., Gil-Lafuente, J., Merigó-Lindahl, J.M., Eds.; Springer: Berlin, Germany, 2012; Volume 2, pp. 335–346.
111. Kleinrichert, D.; Ergul, M.; Johnson, C.; Uydaci, M. Boutique hotels: Technology, social media and green practices. *J. Hosp. Tour. Technol.* **2012**, *3*, 211–225. [[CrossRef](#)]
112. Nicholls, S.; Kang, S. Going green: the adoption of environmental initiatives in Michigan's lodging sector. *J. Sustain. Tour.* **2012**, *20*, 953–974. [[CrossRef](#)]

113. Oreja-Rodriguez, J.; Armas-Cruz, Y. Environmental performance in the hotel sector: The case of the Western Canary Islands. *J. Clean. Prod.* **2012**, *29*, 64–72. [[CrossRef](#)]
114. Sánchez-Ollero, J.L.; García-Pozo, A.; Marchante-Lara, M. Environment and strategic behaviour: The case of hotels in Andalusia. *Int. J. Environ. Res.* **2012**, *6*, 1067–1076.
115. Zhang, J.J.; Joglekar, N.; Verma, R. Pushing the frontier of sustainable service operations management: Evidence from US hospitality industry. *J. Serv. Manag.* **2012**, *23*, 377–399.
116. Becken, S. Operators' perceptions of energy use and actual saving opportunities for tourism accommodation. *Asia Pac. J. Tour. Res.* **2013**, *18*, 72–91. [[CrossRef](#)]
117. Fotiadis, A.K.; Vassiliadis, C.A.; Rekleitis, P.D. Constraints and benefits of sustainable development: A case study based on the perceptions of small-hotel entrepreneurs in Greece. *Anatolia* **2013**, *24*, 144–161. [[CrossRef](#)]
118. Su, Y.P.; Hall, C.M.; Ozanne, L. Hospitality industry responses to climate change: A benchmark study of Taiwanese tourist hotels. *Asia Pac. J. Tour. Res.* **2013**, *18*, 92–107. [[CrossRef](#)]
119. Wyngaard, A.T.; De Lange, R. The effectiveness of implementing eco initiatives to recycle water and food waste in selected Cape Town hotels. *Int. J. Hosp. Manag.* **2013**, *34*, 309–316. [[CrossRef](#)]
120. Ali, Y.; Mashal, K.; Mohsen, M.; Mustafa, M. Energy and environmental performance: Exploratory indicators in the accommodation sector in Jordan. *Int. J. Appl. Eng. Res.* **2014**, *9*, 4467–4480.
121. Cherapanukorn, V.; Focken, K. Corporate social responsibility (CSR) and sustainability in Asian luxury hotels: Policies, practices and standards. *Asian Soc. Sci.* **2014**, *10*, 198–209. [[CrossRef](#)]
122. Coles, T.; Zchiegner, A.; Dinan, C. A cluster analysis of climate change mitigation behaviours among SMTEs. *Tour. Geogr.* **2014**, *16*, 382–399. [[CrossRef](#)]
123. De-Miguel-Molina, B.; de-Migue-Molina, M.; Rumiche-Sosa, M. Luxury sustainable tourism in small island developing states surrounded by coral reefs. *Ocean Coast. Manag.* **2014**, *98*, 86–94. [[CrossRef](#)]
124. Garcia-Pozo, A.; Sanchez-Ollero, J.L.; Marchante-Mera, A. Environmental good practices, quality certifications and productivity in the Andalusian hotel sector. *Int. J. Environ. Res.* **2014**, *8*, 1185–1194.
125. Mackenzie, M.; Peters, M. Hospitality managers' perception of corporate social responsibility: An explorative study. *Asia Pac. J. Tour. Res.* **2014**, *19*, 257–272. [[CrossRef](#)]
126. Tsai, Y.; Wu, C.; Wang, T. Attitude towards green hotel by hoteliers and travel agency managers in taiwan. *Asia Pac. J. Tour. Res.* **2014**, *19*, 1091–1109. [[CrossRef](#)]
127. Su, Y.-P.; Hall, C.M. Climate change and tourism in Asia: A review. In *Responding to Climate Change: Tourism Initiatives in Asia and the Pacific*; UNWTO: Madrid, Spain, 2014; pp. 27–40.
128. Hall, C.M. Tourism and climate change: Knowledge gaps and issues. *Tour. Recreat. Res.* **2008**, *33*, 339–350. [[CrossRef](#)]
129. Hall, C.M. Second home tourism: An international review. *Tour. Rev. Int.* **2014**, *18*, 115–135. [[CrossRef](#)]
130. Adamiak, C.; Hall, C.M.; Hiltunen, M.; Pitkänen, K. Substitute or addition to hypermobile lifestyles? Second home mobility and Finnish CO₂ emissions. *Tour. Geogr.* **2016**, *18*, 129–151.
131. Aall, C.; Hall, C.M.; Groven, K. Tourism: Applying rebound theories and mechanisms to climate change mitigation and adaptation. In *Rethinking Climate and Energy Policies: New Perspectives on the Rebound Phenomenon*; Santarius, T., Walnum, H.J., Aall, C., Eds.; Springer International Publishing: Cham, Switzerland, 2016; pp. 209–226.



© 2016 by the authors; licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC-BY) license (<http://creativecommons.org/licenses/by/4.0/>).