

SUSTAINABLE PRACTICES IN HOTELS IN SRI LANKA: ANALYSIS OF ENVIRONMENTALLY SUSTAINABLE ASPECTS

N. W. THUSITHA DILSHAN & AYAKO TOKO

Faculty of International Tourism Management, Toyo University, Japan

ABSTRACT

Sustainable practices are particularly important in the tourism industry, and a substantial number of studies have shown that different environmentally sustainable practices (hereinafter written as ESP) are used by hoteliers who want to be responsible in the industry. On the other hand, hotel practices have been changing according to the guests' expectations to attract more guests; thus, filling the gap between guests' expectations and satisfaction of ESP is important. Based on that, this study undertook quantitative research with aiming to identify the gap between guests' expectations and satisfaction of ESP in Sri Lankan hotels. The study adopted five dimensions related to ESP which were identified through a preliminary study of previous literature. An empirical survey was conducted online with a structured questionnaire to identify the guests' expectations. Results of factor analysis revealed that environmentally-friendly production, waste management, food and beverage production, and environmentally-friendly hotel construction are the priorities of guests' expectations. Moreover, waste management, biodiversity conservation and food and beverage production represent a significant gap between the guests' expectations and satisfaction of ESP. Finally, this study found that guests' expectations mainly rely on the superficial natural atmosphere; therefore, more appropriate information and interpretation of sustainability would be needed for guests to optimize the usage of natural resources. Moreover, the study recommends that determining the reasons for making guests unsatisfied and find the solutions to minimize the dissatisfaction are important since currently available ESP have not met the satisfaction level of the guests.

Keywords: sustainable tourism, environmentally sustainable practices, hotel industry, guests' expectations, factor analysis, Sri Lanka.

1 INTRODUCTION

Tourism has become a great contributor to the economy in many developing countries. For instance, it contributed 12.6% to the Sri Lankan GDP in 2019 becoming the third major foreign exchange earning sector [1]. This rapid development of the industry in the last few decades has made many opportunities for the stakeholders such as bringing foreign exchange and generating employment. At the same time, tourism makes a negative impact as well due to the huge market competition. Hence, sustainability was required to the tourism industry to mitigate the negative impacts and sustainable tourism has emerged as an alternative tourism product from the 1990s with the aim of minimizing the negative impact to all economic, social and environmental aspects in the tourism industry [2], [3].

The term "sustainable development" became famous worldwide through the publication of the "Brundtland Report" (Our Common Future) by the World Commission on Environment and Development (WCED) in 1987. Since then, sustainable development has been continuously discussed in the United Nations Conferences (Earth Summit in 1992, Millennium Summit in 2000, World Summit on Sustainable Development in 2002, Rio+20 in 2012, and Sustainable Development Summit in 2015) and SDGs (Sustainable Development Goals) are now in process as shown in Fig. 1.



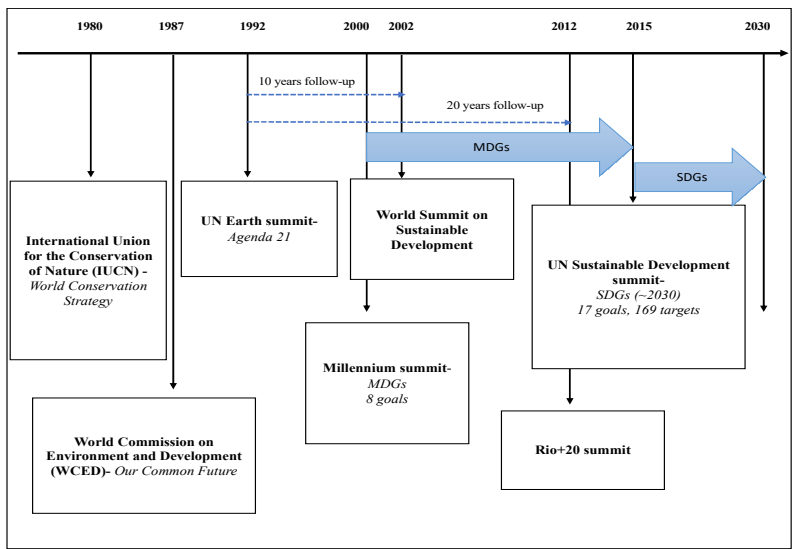


Figure 1: Transition of arguments of sustainable development arguments. (Source: Developed by the author referring to [4]–[6].)

Accordingly, sustainable tourism also became popular in the late 1980s with the aim of increasing the positive effects of tourism on the environment and livelihoods of local communities [7]. In order to achieve sustainable tourism development, three basic elements need to be aligned as economic growth, social inclusion, and environmental protection. These elements are interrelated, and all are essential to the wellbeing of individuals and societies. Most commonly accepted definition of sustainable tourism refers to “an activity that takes full account of its current and future economic, social, and environmental impacts, addressing the needs of visitors, the industry, and the environment and host communities” [8]. Moreover, sustainable tourism was highlighted in the UN Sustainable Development Summit in 2015 because of three goals (it is expected that Goal 8 (Decent Work and Economic Growth), Goal 12 (Responsible Consumption and Production), and Goal 14 (Life Below Water) would be directly supported and promoted by tourism) among the 17 SDGs that are directly associated with the tourism industry, which are inclusive and sustainable economic growth, sustainable consumption and production, and the sustainable use of oceans and marine resources [9].

Hotels are a main sector in the tourism industry which consumes more energy during their operations and their negative impact on nature is also significantly high [3]. As a result, the concept of environmentally-friendly hotels appeared in developed countries in the 1980s [10]. Later, some hotels gradually started to be concerned about the environment and tried their best at changing strategic concepts, improving awareness of the environment and enforcing environment friendly management [10]. According to Akhtar and Najar [11], environmentally sustainable practices (hereinafter written as ESP) in the tourism industry under three major areas of energy management, waste management and water conservation has gained more importance. However, there are many new areas emerging recently in the hotel sector such as biodiversity conservation, environmental education, eco-friendly design, passive design and product innovation [12]. Correspondingly, considerable number of studies have focused on ESP in the hotels such as segregation of garbage, waste recycle, water

conservation, plantation of trees, reuse of unused guests' amenities, paper free office, reuse of linen, electronic key card system, and reusable amenity bottles, by using different analytical methods as descriptive analysis, MANOVA, quality function deployment, factor analysis, and content analysis [11]–[15]. On the other hand, customers are one of key stakeholders of tourism industries and some of them try to demand ESP while paying additional money for sustainable practices and their expectations could be influenced by their knowledge of sustainability activities [16], [17]. Referring to the previous studies, different types of guests' expectations seem to be affected by such as hotel constructions without harming to the environment, atmosphere which harmonies with natural environment, presence of automatic electricity controllers, presence of low-impact interiors, reuse of towels and linens, effective use of water, green products, organic foods and so on [14], [16], [18]–[23].

Considering the current situation of tourism industry and related research explained above, it is significance to focus on ESP of hotels and guests' expectations. At the same time, the authors regard that environmentally sustainable management is a critical issue especially for hotels in developing countries that are vulnerable to environmental changes and want to gain more attractions of responsible tourists who could behave less harmful to the environment. Therefore, this study is accordingly focused on Sri Lanka which is one of leading countries of sustainable tourism in developing countries and already has national certification scheme for the hotel sector. As Ratnayake and Miththapala [24] mentioned that there is a significant potential to improve the sustainable practices in the hotel sector in the county, and another study also revealed that ESP in Sri Lankan hotels help to improve the competitiveness, save money, and attract environmentally concerned customers [25]. On the other hand, there are few studies that focused on guests' expectations that substantially affect hotels' benefits and sustainability. Thus, this study aims to (1) prioritize guests' expectations of ESP in Sri Lankan hotels, and (2) identify the gap between guests' expectations and satisfaction. Results are expected to develop a new method for similar research and to contribute to further improvement of ESP in hotel sector.

2 SUSTAINABLE TOURISM IN SRI LANKA

Sri Lankan tourism industry formally started its developments in 1966 with the establishments of Ceylon Tourist Board (Ceylon Tourist Board was enabled by the Ceylon Tourist Board Act No. 10 of 1966) and the Ceylon Hotels Corporation (Ceylon Hotels Corporation enabled by Ceylon Hotels Corporation Act of 1966) [26]. However, industry experienced a hard period during the thirty years of continued civil war. Again, tourism has become the fastest growing sector in the post-civil war era since 2009 and [27] an adequate number of hotel rooms is a major requirement when the number of tourists increases [28]. Thus, a number of national and international companies have started to invest in the hotel sector. Implementation of sustainable practices in hotels is a key driver towards tourism sustainability [11] and Sri Lankan hoteliers also implemented different sustainable practices in the properties. As a result, Sri Lankan Tourism Development Authority (SLTDA) also started a certification system called National Sustainable Tourism Certification (NSTC) from 2019 with the purpose of evaluating the sustainable practices in the hotels. It was the first time in the world a government tourism organization has taken such a kind of initiative. NSTC is the first step towards making the tourism industry sustainable with the technical and financial assistance of the Biodiversity Finance Initiative (BIOFIN) of the United Nations Development Program (UNDP). Moreover, the certification will be relevant internationally since the global context was considered in designing the project with the facilitation of the Global Sustainable Tourism Council (GSTC) [29]. Thirty-seven hotels have been recognized



for awards on impressive sustainable practices in different categories through an internal and external hotel auditing process under platinum, gold, silver and bronze categories. In addition, four special categories were also recognized as the hotels which had the best specialized practices.

According to Wijesundara [30], Sri Lankan hoteliers have heavily incorporated with economic and social aspects while environmental concerns were in questionable level. Furthermore, Akhtar and Najar [11] also mentioned that environmental sustainability is gaining more importance out of the three dimensions of sustainability and many hotels have already started to implement ESP in their daily business routine. In addition, Abdou et al. [31] also highlighted that, if the resources are not managed properly, they will negatively impact on the environment and operating costs of an organization. Consequently, it brings a significant importance to set priorities guests' expectations and fill the gap between guests' expectations and satisfaction in the ESP in Sri Lankan hotels.

3 METHODS

According to the objectives of (1) prioritize guests' expectations of ESP in Sri Lankan hotels; and (2) identify the gap between guests' expectations and satisfaction of ESP in Sri Lankan hotels, interdisciplinary methods have been applied in the study, and it can be divided into two approaches: (i) literature review and analysis to develop a structured questionnaire, and (ii) empirical survey with a developed questionnaire to identify the guests' expectations and satisfaction. The research conducted online survey because of the limitation of COVID-19 pandemic, and data was collected by using Google form questionnaires. The research targeted two samples as inbound travellers and domestic travellers. The snowball sampling technique was used to collect data and questionnaires was designed in the English language. Google forms were sent through direct emails and social media during the period from December 2020 to April 2021. Totally, 257 respondents' data were collected, and 249 among them was reliable enough for the analysis, which included descriptive analysis and the Exploratory Factor Analysis (EFA) according to the literature review [10], [18], [24]. The detailed process is explained in Table 1.

Table 1: Materials and methods according to the research objectives.

Research objectives	Material and methods
Prioritize guests' expectations of ESP in Sri Lankan hotels	Literature, secondary data, structured questionnaires (online) and Exploratory Factor Analysis (EFA)
Identify the gap between guests' expectations and satisfaction of ESP in Sri Lankan hotels	Literature, structured questionnaires (online) and quantitative analysis

First, the literature review was conducted by the authors to capture the baseline information related to the environmentally sustainable tourism and sustainable practices of Sri Lankan hotels. In addition to various articles from international academic journals, further documents, books, secondary data including UNWTO reports, hotels' annual reports and sustainable policies in the hotels were collected during the literature review process. Subsequently, structured questionnaire was developed based on the results of preliminary research of literature review with a simple form by mainly including closed-ended and open-ended questions as shown in Table 2, which was then used to collect data from the inbound and domestic tourists who have visited Sri Lankan sustainable hotels before the COVID-19



pandemic. As shown in Table 2, questionnaires consist of three main sections. Questions in the first section are used to identify the demographic features of the respondents and the other two sections were developed to fulfil the main research objectives of the study. Five Likert scales were used to measure the expectation level and the satisfaction level in both section 2 and section 3.

Resulting from the literature review, section 2 and section 3 in Table 2, are consisted of five dimensions. Then, as shown in Table 3, each dimension is coded in a specific way with having four indicators.

Table 2: Categories of the questionnaire.

Section 1:	Demographic questions:	Gender, age, region
Section 2:	Expectations regarding sustainable practices:	Willingness to pay additional fee on sustainable practices; Expectations from a sustainable hotel
Section 3:	Sustainable practices in the hotels:	Satisfaction level of the ESP in Sri Lankan hotels

Table 3: Dimensions and indicators. (Source: Developed by the author referring to [11]–[16], [18]–[25].)

Dimensions	Indicator coding	Indicators
Biodiversity conservation (BC)	BC1	The hotel construction not causing any harm to the environment
	BC2	Conserving the natural habitats surrounding the hotel
	BC3	Staff having a good knowledge of environmental conservation
	BC4	Having environmental education programs for visitors
Environmentally friendly energy management (EM)	EM1	Using natural lighting and ventilation
	EM2	Electricity generates from alternative resources (Solar, biomass, etc.)
	EM3	Availability of automated electricity controllers (Automatic switch system, key cards, etc.)
	EM4	Availability of electric buggy carts for transportation
Solid waste and water management (WM)	WM1	Separation of solid waste by rubbish bins
	WM2	Reuse and recycle the solid waste
	WM3	Availability of re-usable drinking water bottles
	WM4	Treatment and reuse of the wastewater
Food and beverage production (FBP)	FBP1	Producing vegetables and fruits from own garden
	FBP2	Buying organic products from surrounding
	FBP3	Preparing foods using organic vegetables
	FBP4	Providing fresh fruit juices
Construction and production through environmentally friendly (EFC)	EFC1	Hotel construction from the natural materials
	EFC2	Room interior designs from the natural materials
	EFC3	Amenities made from natural or reusable materials
	EFC4	Gifts and souvenirs made from natural or reusable materials



Official Facebook pages and Instagram accounts of the hotels and travel agencies were used to identify the travellers who visited hotels in Sri Lanka. Google form questionnaires were distributed on social media platform such as Facebook personal accounts, groups and Instagram accounts. Additionally, a link of the Google form was sent to the email address collected from the Instagram users who have commented and tagged photos related to sustainable hotels in Sri Lanka. Furthermore, TripAdvisor users who have commented and tagged photos about sustainable hotels were another online source used to collect data for the survey. Totally, the link has been shared among 1200 travellers and the response rate is 21.4%. Finally, 249 respondents' data was reliable enough to use for the analysis.

4 PILOT SURVEY

The developed questionnaire was tested by the pilot survey to measure the reliability. According to the structure of the research, there are two sections included to check Cronbach's alpha value. Thus, preliminary analysis has measured the reliability of the guests' expectations and satisfaction level with sustainable hotel practices by using Statistical Package for the Social Sciences (SPSS) software. According to Smith et al. [34], the requirement for a reliable questionnaire is that Cronbach's alpha value must exceed 0.7. The pilot survey selected 20 respondents' samples to ensure meeting the requirement. According to the results, both Cronbach's alpha value belong to the guests' expectations ($\alpha_1=0.90$) and satisfaction($\alpha_2=0.89$) of the ESP in the hotels have exceeded 0.7. It proves that the questionnaire was reliable enough to collect the data for the survey since $\alpha_1 > \alpha_2 > 0.7$.

5 RESULTS

5.1 Demographic features

According to the empirical survey, 123 inbound traveller and 126 domestic traveller responses have been collected during the data collection period. As per the results as shown in Table 4, There is no big difference between male and female respondents. The highest respondents age category is 30–39 and the majority of the inbound guest respondents are from the Asia and Pacific region.

Table 4: Demographic information of the respondents (%).

Region	Domestic	50.60%		
	Africa	1.20%		
	America	4.02%		
	Asia and Pacific	22.89%		
	Europe	17.27%		
	Middle East	4.02%		
		Inbound (n = 123)	Domestic (n = 126)	Total (n = 249)
Gender	Male	51.22%	49.21%	50.20%
	Female	48.78%	50.79%	49.80%
		Inbound %	Domestic%	Total%
Age group	19 or below	0.81%	1.59%	1.20%
	20–29	11.38%	39.68%	25.70%
	30–39	48.78%	45.24%	46.99%
	40–49	24.39%	7.14%	15.66%
	50–59	14.63%	3.97%	9.24%
	60 and over	0.00%	2.38%	1.20%



5.2 Willingness to pay additional fee on sustainability practices

According to the results, 74% of the respondents are willing to pay an additional fee on sustainable practices as shown in Fig. 2, and there is no big difference between inbound and domestic tourists. “How much” was not asked in this survey because the price level is varied in different hotel classes and it is not an objective of this question.

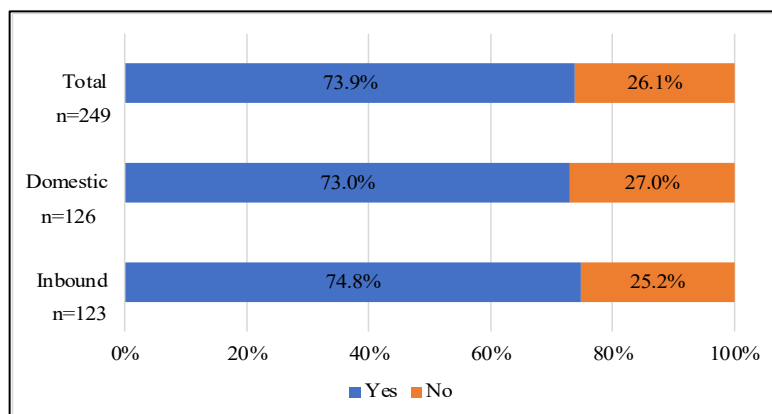


Figure 2: Willingness to pay an additional fee on sustainable practices.

5.3 Guests' expectations in Sustainable hotels in Sri Lanka

For the analysis of the objective (1), the study used EFA to prioritize the guests' expectations. When proceeding a EFA it is necessary that the sample should be greater than 0.5 for Kaiser–Meyer–Olkin (KMO) value and less than 0.005 for Bartlett's test significant value. KMO and Bartlett's test measure the strength of the relationship among variables. As shown in Table 5, it illustrates that the KMO value is 0.864 and Bartlett's test significant value is 0.000. Therefore, both KMO value and Bartlett's test significant value fulfil the requirements. Consequently, the sample is adequate for the EFA to prioritize the guests' expectations of ESP in Sri Lankan hotels.

Table 5: KMO and Bartlett's test.

Kaiser–Meyer–Olkin (KMO) Measure of Sampling Adequacy		0.864
Bartlett's Test of Sphericity	Approx. Chi-Square	2268.51
	df	190
	Sig.	0.000

According to Scree Plot in Fig. 3 which displays the distribution of eigenvalue, there are five components exceeding the eigenvalue of 1. These components are useful for the EFA.

Among the different types of expectations which were examined by indicators explained in Table 3, (I) environmentally friendly production and waste management, (II) food and beverage production, (III) environmentally friendly hotel construction, (IV) natural habitats

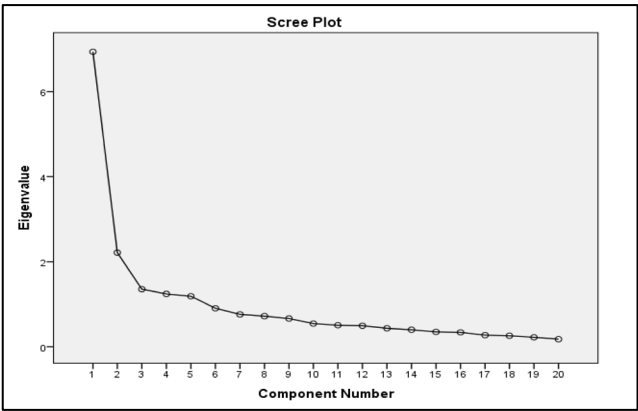


Figure 3: Scree plot.

conservation, and (V) visitor programs about environmental protection have the higher eigenvalue in the order as shown in Table 6. Additionally, indicators belong to each expectation dimension also as shown in Table 6. Furthermore, these five components represent the 64.73% of the total variances among all components.

Table 6: Priorities of guests’ expectations in Sri Lankan hotels.

Statement	Number of indicators	Eigen value	Variance %	Indicators
(I) Environmentally friendly production and waste management	13	6.94	34.70%	BC3, EM1, EM2, EM3, EM4, WM1, WM2, WM3, WM4, EFC1, EFC2, EFC3, EFC4
(II) Food and beverage production	4	2.22	11.08%	FBP1, FBP2, FBP3, FBP4, FBP4
(III) Environmentally friendly hotel construction	1	1.36	6.78%	BC1
(IV) Natural habitats conservation	1	1.22	6.22%	BC2
(V) Visitor programs about environmental protection	1	1.19	5.95%	BC4

Moreover, analysis identified the below ESP with higher factor loading, which were the highly expected practices of the guests in Sri Lankan hotels.

Table 7: Highly expected ESP.

Indicators		Factor loading
Room interior designs from the natural materials	EFC2	0.751
Amenities made from natural or reusable materials	EFC3	0.723
Gifts and souvenirs made from natural or reusable materials	EFC4	0.715
Treat and reuse the wastewater	WM4	0.658
Hotel constructions from the natural materials	EFC1	0.655

5.4 Gap between guests' expectations and satisfactions on ESP

Empirical study has examined and identified the gap between the guests' expectations and satisfaction about ESP by using the five Likert scale. As per the results of the study as shown in Fig. 4, solid waste and water management (WM), biodiversity conservation (BC) and food and beverage production (FBP) are the dimensions which have significant gaps.

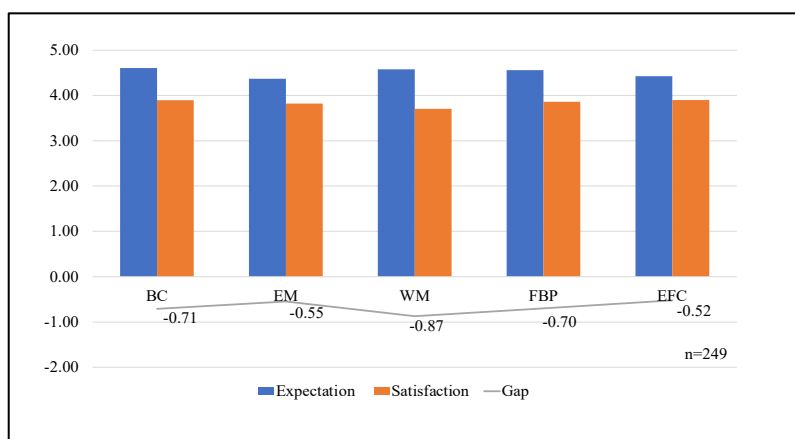


Figure 4: Gap between guests' expectations and satisfactions on ESP.

In addition, the study determined the gaps between guests' expectations and satisfactions of the ESP in practice wise by using eqn (1).

$$S_j = \frac{\sum_{i=1}^n (SAT_i - EXP_i)}{\sum_{i=1}^n (EXP_i)} \times 100\% \quad (1)$$

where S = satisfaction gap; SAT = satisfaction value; EXP = Expectation value; i = number of respondents; j = sustainable practice.

Based on eqn (1), percentages of the gaps have been calculated for all twenty indicators. Consequently, the below mentioned five practices have the higher gaps among the indicators. The significance of the result is that all practices have a negative value (–) and the negative values indicate that the expectations are higher than the satisfaction.

1. Having environmental education programs for visitors (BC4) –22.7%
2. Separation of solid waste by trash bins (WM1) –20.4%



3. Buying organic products from surrounding	(FBP2)	−19.9%
4. Reusing and recycling the solid waste	(WM2)	−19.3%
5. Availability of re-usable drinking water bottles	(WM3)	−19.3%

6 DISCUSSION

According to the results of the study, five dimensions for ESP in Sri Lankan hotels have been firstly identified through the literature review analysis. In addition, each dimension consisted of four ESP, which were used as indicators in this study. The results of the empirical survey proved that majority of the respondents were willing to pay additional fee on sustainable practices, which has been also revealed by the previous research [14], [16], [19]. Furthermore, factor analysis emphasized that there were two critical areas in the prioritization of the guests' expectation in Sri Lankan hotels. The highest prioritized area was environmentally friendly production and waste management consisting of thirteen indicators, and the second highest area was food and beverage production consisting of four indicators. Furthermore, highly expected practices were centered in environment friendly construction (EFC); i.e., EFC2, EFC3, and EFC4. It indicates that guests tend to have higher expectations with practices that are directly observable and affect their comfortable stay such as room interiors, hotel constructions, souvenirs and amenities. Results explained above presented the priority areas and practices of guests' expectations, which would be useful to make a management strategy to meet guests' expectations. In addition, according to previous studies, ensuring the guests' satisfaction is required in the hotel operation of Sri Lanka especially in ESP [25] and it creates many benefits to the hotels as well [24], [25]. Thus, this study clarified the significant gaps between guests' expectations and satisfaction on both dimensions and indicators. Among the dimensions, WM, BC and FBP have the higher gaps, and regarding the indicators, higher gaps are mainly found in biodiversity conservation, waste management and food and beverage production. Moreover, environmental education programs, separation of solid waste by using trash bins inside the premises, buying organic products from hotel surrounding, reusing and recycling the collected wastage, and providing glass water bottles instead of the plastic ones are detailed ESP where gaps are significantly highlighted. The findings and applied methods could help hotel management to mitigate the level of dissatisfaction of their guests towards ESP. Hence, this study identified the areas where more attention should be paid by the hotel management to develop the substantial number of ESP with fulfilling the guests' expectations in Sri Lankan hotels. It could contribute to improve the quality of the ESP from the perspectives of the guests; and ultimately, best practices with economic benefits can be promoted while meeting guests' satisfaction.

7 CONCLUSION AND RECOMMENDATIONS

According to the study, tourists tend to expect superficial aspects of ESP such as room interior, amenities, and gifts and souvenirs from natural materials. However, natural materials also bring another cause of over-use of natural resources or degradation of the natural environment. Thus, more information and interpretation of sustainability, for example, sustainably sourced not just natural, would be needed for guests in sustainable hotels to optimize the usage of natural resources. In addition, this study identified that guests were not wholly satisfied with currently available ESP in Sri Lankan hotels. Hence, revealing the reasons for dissatisfaction are important to create satisfied guests in the hotels. Furthermore, identify the hotel's management's perception of ESP is also important to initiate proper and sufficient number of practices which can be met the guests' expectations. Accordingly increasing number of satisfied guests will increase the market share and profits for the businesses.



This study only concerned about the hotel sector. However, considering the future research, there are many other emerging sectors in tourism industry such as travel and event sectors which are directly involving in sustainable activities. Therefore, this study suggests to research on such emerging sectors since guests' expectations are different from the hotel sector. Moreover, identifying the detailed amount of willingness to pay the additional fee on sustainable practices will also be significantly important for the future research. This research has been focused mainly on the pre-COVID-19 conditions. However, guests' expectations and hotel practices would be changed after the pandemic; for example, more concerns would be based on medical and chemical waste management in the hotels. Thus, research on the post-COVID-19 conditions is another suggestion from this study.

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