

Article

Perceived Attributes of Event Sustainability in the MICE Industry in Thailand: A Viewpoint from Governmental, Academic, Venue and Practitioner

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Abstract: The environmental impacts of meetings, incentives, conventions, and exhibitions (MICE, Event) industries are as far reaching as their economic reach. The travelers who attend events patronize a wide variety of businesses: airlines, car rental agencies, hotels, restaurants, performance venues, and tour operators. The overall research objectives of this study fall on two aspects of sustainability in the event industry: the most prevalent practices that the industry employs and the relative importance of sustainability to convention consumers. This study implements mixed research methods in order to explore the perceptions of sustainable event development in the metropolitan area of Bangkok, Thailand. Empirical evidence on significant issues for event sustainability is provided. Based on the results, recommendations are made to improve sustainable event development in Thailand and offer guidance to the event industry so that it can develop its potential and gain greater prominence on the world MICE stage.

Keywords: event industry; sustainable development; event sustainability

1. Introduction

The acronym ‘MICE’ stands for meetings, incentive travel, conventions, and exhibitions and is recognized as a significant market segment of the tourist industry at large [1–3]. According to the International Meeting Statistics of the Union of International Associations (UIA), in 2016, there were 458,453 international meetings held worldwide [4]. Consequently, MICE are considered to be key areas of growth for tourism industries around the globe, with high yield and higher than average daily expenditure per visitors. Over the last decade there has been substantial development in convention and meeting industries, and countries have responded by expanding the provision of facilities and infrastructure as a means to attract this lucrative share of the tourism market [5].

The industry consists of multiple hospitality service sectors including lodging, food and beverage, catering, convention services, convention facility rentals, transportation, tourism, retail, and entertainment [1,6]. MICE industries also share several common characteristics with hospitality service sectors, such as inseparability of production and consumption, perishability, and seasonality. As many countries have started emphasizing the economic benefits associated with MICE activities, they have quickly attracted commercial attention—especially in Asia, where economic and trade activities experience particularly rapid growth.

MICE industries play an important role in Thailand’s tourism sector. Already recognized as a prime tourist destination, Thailand has been developing itself into an increasingly popular location to hold international events, both product marketing and corporate seminars. Consequently, Thailand’s

MICE sector has seen strong growth in recent years. In 2012, it welcomed 895,224 MICE visitors to a total of 7382 MICE events, with earnings of US\$2.66 billion; thus exceeding annual targets by 19%. MICE travelers from Asia have been largely responsible for this strong growth, and represented 65% of all MICE travelers that year [7].

With an increasing emphasis placed on the idea of “green” activities, the Thailand Convention and Exhibition Bureau (TCEB) and Thai MICE players made the effort to launch the “Green Meetings Campaign” with the aim of promoting environmental responsibility. Meanwhile, they also let the campaign serve as a marketing device to attract overseas MICE businesses to the idea of organizing meetings in Thailand by offering to provide events that are unique, environmentally responsible and representative of Thai culture and hospitality.

Whilst the positive economic gain associated with holding such events should not be underestimated, it is also important to give consideration to broader social aspects [8]. Some events, for example, may be used as vehicles for delivering social messages [9,10] or raising awareness of certain issues. This paper attempts to fill the gap that exists between economic gain and social factors by adopting the holistic viewpoints of three stakeholders namely, attendees & exhibitors, academia and governmental policy makers, in an examination of the way in which event sustainability has developed. The study seeks to accomplish the following two research goals:

- (1) Identify perceived attributes of sustainability practices of concern to MICE attendees and exhibitors; and
- (2) Understand the importance implemented sustainability practices and policies in MICE industry.

Each of these questions is addressed not only through the collection and analysis but also through a thorough review of relevant literature and past research.

2. Literature Review

2.1. Overview of Thailand's MICE Industry: The Challenges in Realizing Sustainable Events Development

All events by their nature are highly resource-intensive, and can have negative environmental consequences for the host city and population. In particular, large scale events, such as conferences and conventions can be major sources of greenhouse gas emissions, pollution and waste. Aspects of the environmental impact of events include but are not limited to energy usage, water consumption, waste, transport, fuel usage, carbon emissions, air pollution, procurement and food and beverage [11]. Implementing sustainable practices can help reduce the economic costs and environmental impact of all activities at a convention center [12]. Currently, practices of sustainability at conferences and conventions are viewed as part of a megatrend that is influencing the industry.

According to Karen Kotowski [13], chief operating officer of the Convention Industry Council (CIC), the CIC accepted practices exchange (APEX) Panel on green meeting and events is in the final stage of the development of standards for sustainable meeting and events. The standard will be the only American Society of Testing and Materials (ASTM) certified standards for green meetings. The standards cover nine individual topic areas: accommodations, audiovisual, communication, exhibits, food and beverage, on-site office, destination, meeting venue, and transportation. ASTM International is an American National Standards Institute (ANSI) accredited standards developing organization. Although the APEX process has always followed the voluntary consensus model mandated by ASTM and ANSI, APEX elected to take the extra step in partnering with ASTM in order to create standards that were accepted by both the meeting industry and those outside the industry such as the federal government. The ASTM/APEX Green meeting and Event Standards will be voluntary. However, voluntary standards developed in this manner are often cited in laws, regulations, and codes, giving them even greater credibility. Hundreds of APEX volunteers from the meetings industry, government, international organization, and nongovernment organization (NGOs) have devoted countless hours of discussion and refinement as the first step in solidifying green meeting

practices. The APEX panel has worked cooperatively with the Environment Protection Agency as well as other sustainable hospitality industry organizations such as Green Meetings Industry Council and Green seal that were also stakeholders in this process.

ISO 20121 certification is one of implementing sustainable practices to management system standard that has been designed to help organizations in the events industry improves the sustainability of their event related activities, products and services. ISO 20121 is based on the earlier British Standard called 'BS 8901 Specification for a Sustainability Management System for Events' which was first developed in 2007 [14,15].

Major public sector and private sector clients are referencing ISO 20121 in their tender documents as they work to ensure that their own sustainability policies are being implemented. In time, demonstrating compliance to ISO 20121 is likely to become a minimum requirement for anyone wishing to operate in the events industry as event clients, sponsors, local authorities and other key stakeholders choose to work with organisations that have implemented the standard [14,15].

However, despite the fact that it is a current issue, literature identifying the role in which sustainability plays within MICE industries is limited. There is few evidence to support the argument that consumer decisions are influenced by environmental concerns [16]. Furthermore, it seems to be the case that, until recently, there has actually been a lack of awareness and understanding of what these sustainable initiatives should even look like.

The United States Environmental Protection Agency defines sustainability as "creating and maintaining the conditions under which humans and nature can exist in productive harmony that permit fulfilling the social, economic and other requirements of future generations." However, as Park and Boo [17] noted, although the convention industry continues to achieve sustainable growth, there is no established process for achieving that objective.

2.2. *The Perception of Event Sustainability and Barriers to Environmental Behavior*

Event planners are considered to be the intermediaries between suppliers and attendees, as well as the de facto managers of the entire process. Thus, implementing environmentally responsible practices and demonstrating concern for the environmental criteria in the decision-making process seems to be vital competencies for event planners [18]. Previous research suggests that further discussions about the role and influence of event planners are necessary because, for example, site selection by event planners can encompass major functions of the meeting. Specifically, the availability of hotels, food and beverage services, and transportation, along with the functionality of the venue, are the primary considerations for event planners when deciding where to hold an event [19,20]. In addition to the event facility itself, all other sectors, such as hotels venue, food and beverage suppliers, must implement eco-friendly practices. Event planners can exert leverage over these sectors by emphasizing the importance of the status of their green implementation as a basis for choosing an event site. In turn, all parties involved in staging a meeting or event are likely to become more environmentally conscious.

Some of the research has focused on the barriers event planners must overcome in order to adopt pro-environmental behavior. There have also been few empirical tests conducted to identify the constraints of "greening" the meeting and event tourism industry. When developing a model of the drivers and barriers in the greening of the business events sector, Mair and Jago [21], articulated that barriers include shortages in resources, knowledge, awareness, and/or skills. From the viewpoint of environmental psychology, these factors are grouped into the category of internal factors influencing eco-conscious behavior. According to Stern and Oskamp's [22], environmental behavior model, the ecological behavior is a combination result of both internal and external factors. The internal factor category refers to personal attributes such as attitudes, beliefs, and knowledge; while external factors include social institutions, economic forces, and physical structures. Within the body of literature, researchers have found that barriers to certain behaviors are personal or contextual [23]. Particularly in the domain of environmental behavior, research has typically focused on the role of factors within the personal realm [23–25].

2.3. Importance–Performance Analysis (IPA)

Evaluating the importance and performance of a business can be critical and beneficial to understanding how customers perceive that business. Martilla and James [26] created the importance–performance analysis (IPA) technique as a performance indicator. They point out that IPA is a low-cost, easily understood technique that can illustrate important aspects of the marketing mix which businesses or destinations should give more attention to. Additionally, the IPA helps identify critical areas that may be consuming too many resources [26]. IPA provides an accessible visual framework for understanding the relationship between customers and companies or organizations with respect to a variety of different product characteristics simultaneously [27].

As mentioned earlier, the IPA approach is used in this study to investigate the differences and similarities of the perceptions of Thai people and foreigners visiting Thailand for meetings, conferences or exhibitions with respect to criteria for sustainable events. According to Whitfield et al. [28], MICE related studies which employ the IPA technique analyze importance ratings combined with perceived performance responses to provide practical and evaluative insights regarding the strategic soundness of integrated venues as a path for sustainable event development.

It is apparent that the location in which a meeting is held will often influence the number of attendees that participate [29]. However, there appears to be gaps in the literature regarding sustainable practices implemented at convention centers and in the understanding of whether these practices influence a person's decision to attend or plan a meeting at that particular location. The primary purpose of this research, therefore, is to assess the current perceptions of international participants whom intend to attend meetings, conventions or exhibitions with respect to the above mentioned. Focus will be given to significant issues in the criteria for event sustainability as perceived by Thai people and foreigners, and suggestions provided for event industry management and planners regarding the direction of future strategy.

3. Methodology

The study used both qualitative and quantitative methods to gather and understanding of the viewpoint of four groups of stakeholders: (1) governmental policy maker; (2) academia; (3) venue; and (4) participants/attendees. The quantitative method allows researchers to understand the practices of current event and event sustainability perspective of participants/attendees perceptions and their identification of importance-performance factors. In addition, the qualitative method was designed to deep understanding the perception of governmental, academics and venues towards the interviewees were asked to express their opinions and perspectives regarding barriers or problems that might have effect on the sustainable development of the event industry in Thailand. They were also asked to suggest ways to overcome these barriers, respectively. The research framework is seen in Figure 1.

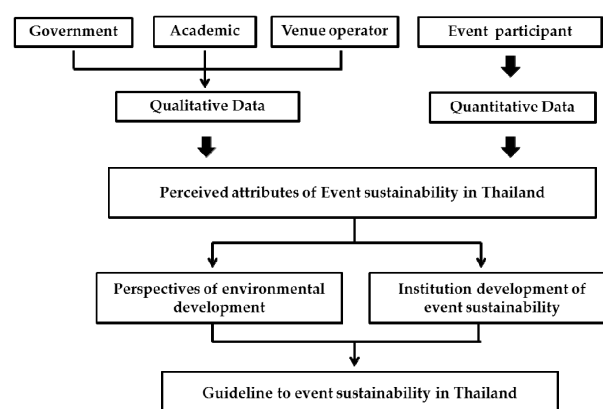


Figure 1. Research framework.

3.1. Quantitative Method—Survey Questionnaires

The quantitative was collected via survey questionnaires asking international MICE tourists and international participants who intended to attend meetings, conventions or exhibitions about their perceptions of the sustainable event development in Bangkok and surrounding metropolitan area. The questionnaire design was modeled after the green meetings standard from the Thailand Environment Institute (TEI) and event sustainability guideline from Thailand Convention and Exhibition Bureau (TCEB). The content of the survey questionnaires was developed to examine respondents' perceptions of how important each of the criteria are for sustainable events development and to gain insight into how well event organizers were incorporating those criteria into the events attended by the respondents. A set of 5 group criteria was adopted and a corresponding TCEB questionnaire developed for use in this study [30]. The survey targeted international participants who attended meetings, conventions or exhibitions in Bangkok or the surrounding metropolitan area. A total of 500 questionnaires were distributed from July to September, 2015, with 342 Thai respondents (68.4%) and 158 foreigner respondents (31.6%). The completed questionnaires were proportionately distributed between 3 major venues (Bangkok International Trade and Exhibition Center, Impact Muang Thong Thani and Queen Sirikit National Convention Center). The Statistical Package for Social Sciences (SPSS 17.0) was used to compute the statistical analyses. Reliabilities were performed using Cronbach's alpha coefficients and were above the minimum value of 0.5 for all attributes; ranging from 0.85 to 0.92 [31] (See Table 1).

Table 1. The number of people responding to survey questionnaires ($n=500$).

Nationality	Frequency	Percent (%)	Nationality	Frequency	Percent (%)
American	17	3.4	Iranian	1	0.2
Australian	4	0.8	Israel	1	0.2
Austrian	3	0.6	Italian	4	0.8
Bangladesh	3	0.6	Japanese	1	0.2
Belgian	3	0.6	Lao	2	0.4
British	9	1.8	Lithuanian	1	0.2
Bruneian	5	1.0	Malaysian	1	0.2
Bulgarian	2	0.4	Nigerian	1	0.2
Burmese	6	1.2	Netherland	1	0.2
Cambodian	3	0.6	New Zealander	2	0.4
Canadian	2	0.4	Polish	1	0.2
Chinese	4	0.8	Russian	4	0.8
Czech	1	0.2	Singaporean	4	0.8
Danish	2	0.4	South Africa	1	0.2
Filipino	13	2.6	Spanish	1	0.2
Finnish	3	0.6	Sri Lanka	3	0.6
French	8	1.6	Swedish	2	0.4
German	7	1.4	Taiwanese	1	0.2
Hungarian	2	0.4	Thai	342	68.4
Indian	10	2.0	Vietnamese	13	2.6
Indonesian	6	1.2	Total	100	100

Individuals are responding to the survey questionnaire were asked to evaluate the importance of and their satisfaction levels with 5 groups of selection criterion items. A descriptive statistical analysis was employed to examine the perception levels of the international participants. A *t*-test and Chi-square comparison analysis were conducted for the purpose of identifying the emerging issues and ratings of the importance of 27 selection criteria as perceived by Thai people and foreigners.

3.2. Qualitative Method—In-Depth Interviews

As for the qualitative research design, were collected through a semi-structured in-depth interview with 4 governmental policy maker, 2 academics and 3 venues who are involved with Thailand's

sustainable event development. Rittichainuwat and Mair [32] highlight that the qualitative research, it would be very beneficial to undertake research, in order to gain rich and depth of understanding in this vitally important area. They were also asked to suggest ways to overcome these barriers. The interview schedule was designed to understand the perception of government, academics and venues towards the interviewees were asked to express their opinions and perspectives regarding barriers or problems that might effect of the sustainable development of the event industry in Thailand.

The interviewees were chosen based on a purposive sampling method and snowball sampling technique together with the advice of tourism/event scholars. Data collection began with an interview of two scholars from the Tourism Academic Association of Thailand, and was followed by an interview with four industry executives, coming from the Thailand Convention and Exhibition Bureau (TCEB), Thailand Environment Institute (TEA), Thailand Incentive and Convention Association (TICA) and Thai Exhibition Association (TEA). The 3 venues represent the IMPACT Arena Exhibition and Convention Center (IMPACT), Queen Sirikit National Convention Center (QSNCC) and the Bangkok International Trade & Exhibition Centre (BITEC).

In analyzing qualitative data, content analysis was employed to contextualize the connections between categories and themes. Tables were constructed to identify the themes and evolving concepts with the aid of Microsoft Excel computer software. Content analysis is considered an appropriate research technique for making replicable and valid inferences from texts on the contexts of their use, and it provides new insights by increasing the researcher's ability to understand particular phenomena or informing them on practical actions [33].

After the collection of primary and secondary data, which took place from July to September, 2015, all information was summarized and then discussed with two scholars specializing in the MICE industry in an effort to put the information in context in terms of its relevance and importance to the industry. (See Table 2).

Table 2. The number of people responding to the qualitative interviews.

Category	Informants	Affiliation and Title	Gender
Industry Executives	E1	Manager of Department	Female
	E2	Project Manager	Female
	E3	President of Association	Female
	E4	General Manager/Chairperson	Female
Academics	A1	Dean of the University	Male
	A2	Assoc. Director/University	Female
Venues	V1	Senior Director	Male
	V2	Senior Vice President	Female
	V3	Manager	Female

4. Results

The discussion of the research results focuses on four key items that the pointed towards:

- Understanding the recognition of and recommendation for the sustainable development of the events industry in Thailand
- Perceived importance of criteria in creating event sustainability
- Importance performance analysis (IPA)—Sustainable event development in Thailand

4.1. Understanding the Recognition of and Recommendation for Sustainable Development of the Events Industry in Thailand

In order to seek further information as to the level of knowledge that attendees have on conventions, they were each asked to indicate whether or not they had some level of involvement with the organization of conventions. Interestingly, almost half of respondents noted that they had prior

involvement in organizing conventions; although the details of their involvements were not recorded. Again, this suggests that, generally speaking, respondents were not only frequent convention attendees, but were also often involved in the organization of conventions and thus should have somewhat deeper understandings or more extended knowledge of convention organization.

As shown in Table 3, the demographic characteristics revealed that the 342 Thai respondents made up the majority (68.4%), with foreigners (158 respondents) accounting for 31.6% of the total. The balance between females (54.2%) and males (45.8%) of all age groups was more closely matched. The vast majority (98%) of those surveyed were well educated and worked full time. The age group with the highest representation was 21–30 years old (44%), followed by 31–40 (34.2%), 41–50 (13.2%), 51–60 (4.6%), less than 20 (2.2%), 61–70 (1.2%) and 71–80 (0.6%). Respondents were primarily tourists who intended to attend conferences/seminars/workshops (51.4%) followed by exhibitors (24.8%), those making contracts/visiting suppliers or customer (13.4%), those gathering information (5.0%), those purchasing products (3.4%) and organizers (2.0%).

Table 3. Demographic details of respondents ($n=500$).

Characteristics	Frequency	Percentage (%)
Nationality		
Thai	342	68.4
Foreigner	158	31.6
Gender		
Male	229	45.8
Female	271	54.2
Age		
20 or under	11	2.2
21–30 years	220	44.0
31–40 years	171	34.2
41–50 years	66	13.2
51–60 years	23	4.6
61–70 years	6	1.2
71–80 years	3	0.6
Occupation		
Professional/Freelancer	105	21.0
Administrative/Managerial executive	123	24.6
Clerical/Salesman or Commercial personnel	45	9.0
Labor/Production or Service workers	55	11.0
Government/State enterprise officer	166	33.2
Engineer	6	1.2
Purpose for Visit to MICE event		
Make contract/Visit Supplier/Customer	67	13.4
Purchase products	17	3.4
Gather information	25	5.0
Attend conference/Seminar/Workshop	257	51.4
Exhibitor	124	24.8
Organizer	10	2.0

4.2. Perceived Importance of Criteria in Creating Event Sustainability

The respondents were asked to rank the importance of criteria for event sustainability [34]. The perceived importance of the 27 criteria in creating sustainability was studied by looking at all respondents from both the Thai and foreigner groups. Interestingly, the top ten criteria for creating sustainable events as perceived by both the Thai respondents and foreigners were as follows: “marked, public recycle bins” ($M = 3.92$), “paper/cardboard recycling” ($M = 3.89$), “plastics recycling” ($M = 3.88$),

“glass recycling” ($M = 3.85$), “energy management system” ($M = 3.83$), “offer locally sourced food for events” ($M = 3.82$), “use of energy efficient lighting” ($M = 3.79$), “provide biodegradable food packaging and utensils” ($M = 3.79$), “electronics recycling” ($M = 3.78$), and “reusable and environmentally friendly display products or promotional materials” ($M = 3.77$). On the other hand, the criteria perceived to be least important for creating a sustainable event was “garden or plantings on roof” ($M = 3.47$) (see Table 4).

Table 4. Perceived importance of criteria for event sustainability ($n=500$).

Criteria	Mean ^a
1. Reusable and environmentally friendly display products or promotional materials	3.77
2. On-site recycling programs	3.70
3. Reduced amount of paper usage for handouts or flyers	3.76
4. Use of electric or hybrid transportation at the event	3.59
5. Use of energy efficient lighting	3.79
6. Use of motion sensors for controlling lights and heating/AC	3.60
7. Use of programmable temperature control	3.66
8. LEED certified event building/facility	3.51
9. High-reflectivity roof	3.50
10. Garden or plantings on roof	3.47
11. Energy management system	3.83
12. Periodic building commissioning	3.63
13. Paper/cardboard recycling	3.89
14. Glass recycling	3.85
15. Plastics recycling	3.88
16. Electronics recycling	3.78
17. Marked, public recycle bins	3.92
18. Offer organic food for events	3.69
19. Offer locally sourced food for events	3.82
20. Provide biodegradable food packaging and utensils	3.79
21. Donate unused/untouched food to charity	3.75
22. Maintain an on-site garden	3.60
23. Employee green team	3.60
24. Formal, written green purchasing policy	3.55
25. Formal, written environmental policy	3.62
26. Formal program that educates attendees on sustainability	3.67
27. Formal process for addressing environmental complaints	3.63

^a 1, extremely unimportant; 2, unimportant; 3, Neutral; 4, important; 5, extremely Important.

Event Sustainability Criteria Sub-Dimensions

As shown in Table 5, five factors of event sustainability criteria were identified. All items indicate factor loadings greater than 0.5 and have eigenvalues greater than 1, accounting for 11.05% of the total variance. The reliability coefficient of the entire scale was 0.95 (see Table 5). All factors show reliability coefficients ranging between 0.72 and 0.86, thus showing a reasonable level of internal consistency among items.

The first-factor group, “sustainability-related initiatives”, includes reusable and environmentally friendly display products or promotional materials. The current study identified the event sustainability level of exhibition venues on communication and public relations and found that the exhibition venues succeeded in providing information about the exhibition and promoting the venues in the high level of green practices. These findings also echo the study of Yoopetch and Mingkwan (2016). In addition, using new media, such as SMS, email and websites, helped reducing waste, leading to the more environmentally friendly, on-site recycling programs, reduced amounts of paper usage for handouts or flyers, and use of electric or hybrid transportation at the event. This factor group explained 3.94% of the total variance with a reliability coefficient of 0.72. The second factor

group, “electricity consumption”, includes use of energy efficient lighting, use of motion sensors for controlling light and heating/AC, use of programmable temperature control, LEED certified event building/facility, high-reflectivity roof, garden or plantings on roof, energy management system, and periodic building commissioning. This group explains 1.70% of the total variance with a reliability coefficient of 0.86. The third factor group is “waste diversion” and includes paper/cardboard recycling; glass recycling; plastics recycling; electronics recycling; and marked, public recycle bins and explains 1.60% of the variance with a reliability coefficient of 0.83. The fourth factor group is “facility’s foodservice” and includes the offering of organic food for events, locally sourced food for events, provision of biodegradable food packaging and utensils, donation of unused/untouched food to charity, and maintenance of an on-site garden. This group explains 2.54% of the variance with a reliability coefficient of 0.84. The last factor group is “enhance sustainability” and includes employee green teams; formal, written green purchasing policies; formal, written environmental policies; formal programs that educate attendees on sustainability; and formal processes for addressing environmental complaints. It explained 1.27% of the variance with a reliability coefficient of 0.83. Yoopetch and Mingkwan highlight that, the venues should improve and further develop including reduction of using handbills and brochures as well as encouraging the adoption of electronic registration.

Table 5. Factor analysis scale in perception of event sustainability criteria and the mean for each factor.

Event Sustainability Factors and Criteria	Factor Loading	Variance Explained (%)	Reliability Coefficient	Mean Value, Importance/ (Performance) Thai People (n = 342)	Mean Value, Importance/ (Performance) Foreigners (n = 158)
Factor 1—Sustainability-related initiatives		3.94	0.72	3.69 (3.32) **	3.75 (3.08) **
I1. Reusable and environmentally friendly display of products or promotional materials	0.735			3.74 (3.01)	3.84 (2.57)
I2. On-site recycling programs	0.785			3.66 (3.89)	3.80 (3.92)
I3. Reduced amount of paper usage for handouts or flyers	0.721			3.75 (2.74)	3.80 (2.11)
I4. Use of electric or hybrid transportation at the event	0.779			3.62 (3.63)	3.54 (3.73)
Factor 2—Electricity consumption		1.70	0.86	3.64 (3.53) **	3.59 (3.50) **
I5. Use of energy efficient lighting	0.803			3.71 (3.70)	3.96 (3.77)
I6. Use of motion sensors for controlling light and heating/AC	0.777			3.63 (3.62)	3.53 (3.32)
I7. Use of programmable temperature control	0.754			3.69 (3.65)	3.61 (3.80)
I8. LEED certified event building/facility	0.762			3.56 (3.19)	3.40 (2.99)
I9. High-reflectivity roof	0.769			3.57 (3.77)	3.34 (3.90)
I10. Garden or plantings on roof	0.767			3.46 (3.25)	3.49 (2.97)
I11. Energy management system	0.816			3.82 (3.65)	3.85 (3.81)
I12. Periodic building commissioning	0.755			3.68 (3.41)	3.52 (3.44)
Factor 3—Waste diversion		1.60	0.83	3.79 (3.31) **	4.03 (3.06) **
I13. Paper/cardboard recycling	0.764			3.80 (3.33)	4.09 (3.19)
I14. Glass recycling	0.747			3.79 (3.28)	3.99 (3.03)
I15. Plastics recycling	0.742			3.79 (3.34)	4.08 (3.04)
I16. Electronics recycling	0.744			3.73 (3.43)	3.89 (3.03)
I17. Marked, public recycle bins	0.738			3.83 (3.17)	4.11 (3.01)
Factor 4—Facility’s foodservice		2.54	0.84	3.70 (3.45)	3.80 (3.50)
I18. Offer organic food for events	0.763			3.67 (3.33)	3.73 (3.29)
I19. Offer locally sourced food for events	0.813			3.76 (3.81)	3.96 (4.09)
I20. Provide biodegradable food packaging and utensils	0.779			3.74 (3.18)	3.91 (3.09)
I21. Donate unused/untouched food to charity	0.773			3.65 (3.38)	3.98 (3.50)
I22. Maintain an on-site garden	0.782			3.69 (3.54)	3.42 (3.51)
Factor 5—Enhance sustainability		1.27	0.83	3.64 (3.36) **	3.56 (3.14) **
I23. Employee green team	0.751			3.62 (3.43)	3.56 (3.41)
I24. Formal, written green purchasing policy	0.773			3.63 (3.52)	3.37 (3.27)
I25. Formal, written environmental policy	0.791			3.66 (3.46)	3.55 (3.15)
I26. Formal program that educates attendees on sustainability	0.764			3.67 (3.10)	3.69 (2.92)
I27. Formal process for addressing environmental complaints	0.758			3.63 (3.30)	3.63 (2.96)

Note: Total variance explained and the overall reliability coefficients are 11.05% and 0.95, respectively. Mean values of importance and performance were measured on a Likert 5-point scale: for importance: 1, extremely unimportant; 3, neutral; 5, extremely important; and for performance: 1, strongly disagree; 3, neutral; 5, strongly agree. **, $p < 0.05$.

The results indicate that based on mean values, the most important criteria for perception of event sustainability are related to “facility’s foodservice” (Factor 4). The second most important is

“electricity consumption” (Factor 2). The third and fourth most important criteria in perception of event sustainability are “waste diversion” (Factor 3) and “sustainability-related initiatives” (Factor 1). And the least important criteria turns out to be factor 5 (enhance sustainability).

4.3. Importance Performance Analysis (IPA)

An IPA analysis was performed and all 27 attributes were plotted on the importance performance grid according to their relationship to each of the following four quadrants: “Concentrate Here”, “Keep up the Good Work”, “Low Priority”, and “Possible Overkill”. The four quadrants are constructed based on the grand mean value of the 27 attributes’ importance and performance, respectively. The two grids show somewhat different configurations for the Thai people group and the foreigner group.

4.3.1. First Quadrant: Concentrate Here

Neither Thai people nor foreigners seemed to perceive “waste diversion” to be of high importance. This is evident by the attributed composite that includes I01 “reusable and environmentally friendly display products or promotional materials”, I03 “reduced amount of paper usage for handouts or flyers”, I13 “paper/ cardboard recycling”, I14 “glass recycling”, I15 “plastics recycling”, I17 “marked, public recycle bins”, and I20 “provide biodegradable food packaging and utensils”. When contrasting the Thai group’s grid with that of the foreigners, only the one attribute item of I16 “electronics recycling” was anomalous. International participants felt that these attributes were very important, the venues can improve their green practices by reducing the usage of paper and decreasing waste [34]. They also indicated that performance levels were low. Thus, the “Concentrate Here” quadrant contained items that require additional attention. These attributes are closely associated with the International participants’ perception of quality; therefore, if stakeholders ignore these attributes, it will be difficult to develop the event industry in Thailand according to expectations of environmental sustainability.

4.3.2. Second Quadrant: Keep Up the Good Work

Several factors were identified in the second quadrant for both the Thai and foreigner groups. The findings indicate that these attributes are perceived as very important by both groups and are also performed relatively well at the events. Thus, the event sustainability organizers should keep up the good work with regard to these attributes. The common items for both groups in this quadrant were I05 “use of energy efficient lighting,” I11 “energy management system” and I19 “offer locally sourced food for events”. Perceptions differed between the Thai and foreigner groups on different items. From the two groups, the five non-common attributes located in the “Keep up the Good Work” quadrant of the grid include I02 “on-site recycling programs,” I07 “use of programmable temperature,” I16 “electronics recycling,” I21 “donate unused/untouched food to charity,” and I22 “maintain an on-site garden”. The scores of these eight (common/non-common) attributes are considered relatively high in both importance and performance. All of these attributes strongly influenced international participants’ event exhibit experiences, and visitors were pleased with the event’s performance with regards to them. The attributes with high ratings in both importance and performance represent competitive advantages for this exhibit. Paying attention to the attributes in the “Keep up the Good Work” quadrant may help the event industry to continue to meet expectations of environmental sustainability. Furthermore, the findings strengthen Yoopetch and Mingkwan’s (2016) study in suggesting the use of new technology can effectively help the organizations reduce costs and support sustainable business practices.

4.3.3. Third Quadrant: Low Priority

The third quadrant is classified as ‘low priority’ because the factors in this area were considered relatively less important and the actual performance is below the mean score of all the other attributes. Four sub-dimensions of the attributes were identified in this quadrant for both groups: I08 “offer organic food for events,” I10 “garden or plantings on roof,” I26 “formal program that educates attendees on sustainability,” and I27 “formal process for addressing environmental complaints”. According to the

grid, a total of two attributes were perceived differently by the Thai and foreigner groups; these were I18 “offer organic food for events,” and I25 “formal, written environmental policy”. The six attributes receiving a low rating in both performance and importance do not require additional attention in the effort to improve perceptions of event sustainability.

4.3.4. Forth Quadrant: Possible Overkill

Martilla and James (1977) named the group of attributes falling in the fourth quadrant ‘possible overkill’. The importance of these attributes is low but their actual performance is higher than the mean score of overall performance. In this category, common to both groups include I04 “use of electric or hybrid transportation at the event,” I06 “use of motion sensors for controlling light and heating/AC,” I09 “high-reflectivity roof,” I12 “periodic building commissioning,” I23 “employee green team,” and I24 “formal, written green purchasing policy”. A total of five items in the Thai and foreigner groups are perceived differently. Non-common attributes included I02 “On-site recycling programs,” I07 “use of programmable temperature control,” I18 “offer organic food for events,” I22 “Maintain an on-site garden,” and I25 “Formal, written environmental policy”. Generally speaking, the venues did a good job on these event sustainability criteria items; however, the international participants attached little importance to them. Resources committed towards event sustainability would be better used on the attributes located within the “Concentrate Here” quadrant, as Figures 2 and 3 show.

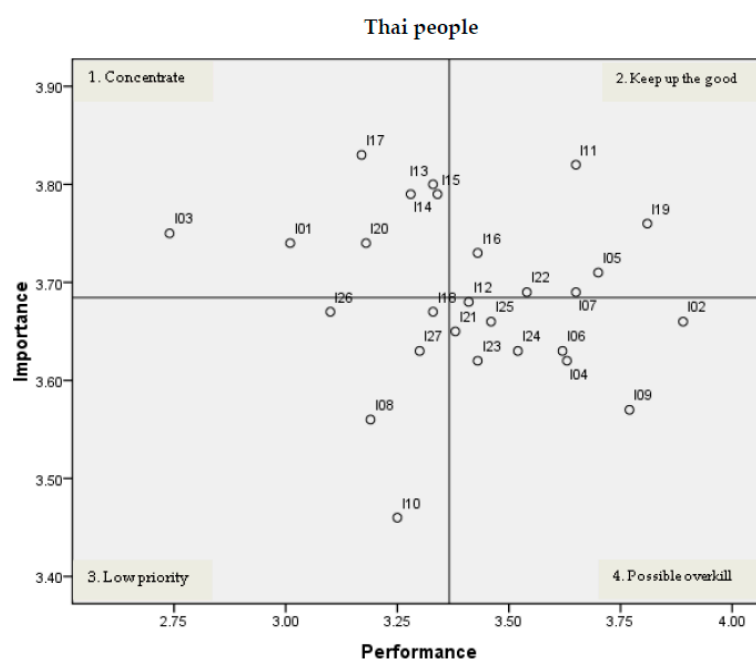


Figure 2. Importance performance analysis (Thai people group). Note: I01, Reusable and environmentally friendly display products or promotional materials; I02, Onsite recycling programs; I03, Reduced amount of paper usage for handouts or flyers; I04, Use of electric or hybrid transportation at the event; I05, Use of energy efficient lighting; I06, Use of motion sensors for controlling light and heating/AC; I07, Use of programmable temperature control; I08, LEED certified event building/facility; I09, High-reflectivity roof; I10, Garden or plantings on roof; I11, Energy management system; I12, Periodic building commissioning; I13, Paper/cardboard recycling; I14, Glass recycling; I15, Plastics recycling; I16, Electronics recycling; I17, Marked, public recycle bins; I18, Offer organic food for events; I19, Offer locally sourced food for events; I20, Provide biodegradable food packaging and utensils; I21, Donate unused/untouched food to charity; I22, Maintain an on-site garden; I23, Employee green team; I24, Formal, written green purchasing policy; I25, Formal, written environmental policy; I26, Formal program that educates attendees on sustainability; and I27, Formal process for addressing environmental complaints.

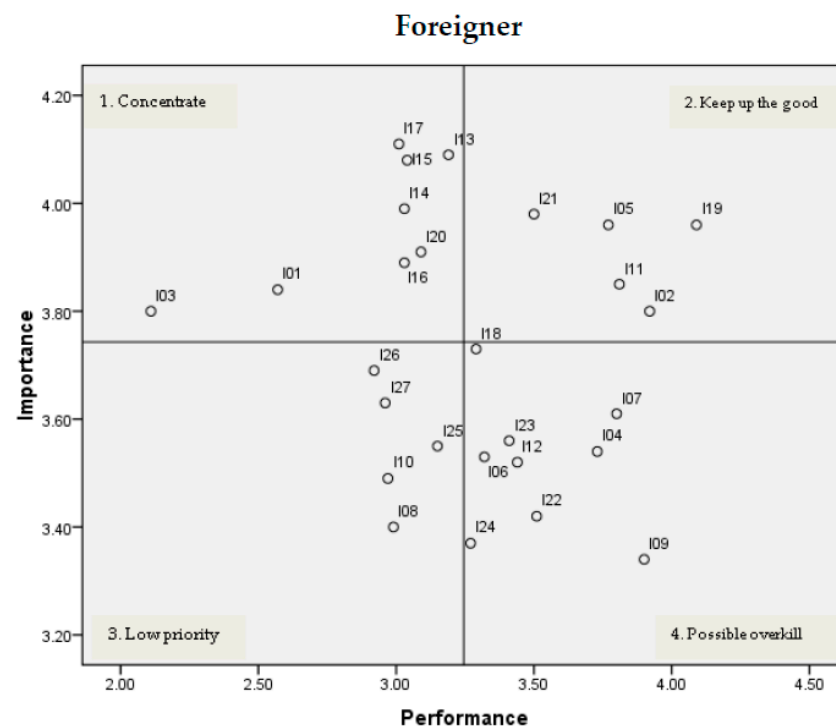


Figure 3. Importance performance analysis (Foreigner group). Note: I01, Reusable and environmentally friendly display products or promotional materials; I02, On-site recycling programs; I03, Reduced amount of paper usage for handouts or flyers; I04, Use of electric or hybrid transportation at the event; I05, Use of energy efficient lighting; I06, Use of motion sensors for controlling light and heating/ AC; I07, Use of programmable temperature control; I08, LEED certified event building/ facility; I09, High-reflectivity roof; I10, Garden or plantings on roof; I11, Energy management system; I12, Periodic building commissioning; I13, Paper/ cardboard recycling; I14, Glass recycling; I15, Plastics recycling; I16, Electronics recycling; I17, Marked, public recycle bins; I18, Offer organic food for events; I19, Offer locally sourced food for events; I20, Provide biodegradable food packaging and utensils; I21, Donate unused/ untouched food to charity; I22, Maintain an on-site garden; I23, Employee green team; I24, Formal, written green purchasing policy; I25, Formal, written environmental policy; I26, Formal program that educates attendees on sustainability; and I27, Formal process for addressing environmental complaints.

4.4. Sustainable MICE Development in Thailand: A Qualitative Exploration

Thailand has advocated the greening of its MICE industry, both to serve as a positive marketing tool and way to help protect the environment. The widespread acceptance of TCEB's green guidelines within the Thai events industry has led to more business coming to Thailand as organizers have indicated their preference for holding business events in green destinations. Event companies, also called event organizations, could be considered as the main players in a sustainable event stakeholder system [21]. In the event industry it is considered important for event companies to have a CSR policy [35].

Most of the research informants pointed out that sustainable development in the event industry is not just a trend but also a necessity—and must follow international standards. Interviewees also suggest that event sustainability is important to the development of the event industry in Thailand. Nevertheless, the main strategies of conducting event sustainability rely heavily on the government policy makers. Event sustainability should be promoted not only as a necessary marketing strategy, but also an essential principle for pursuing overall sustainability objectives. Furthermore, not all respondents have the same perceptions and attitudes towards green meetings, and sponsors appear

to be less supportive when it comes to a number of the green meeting expectations proposed in this survey.

During the interviews, venue managers mentioned that they need a member of the staff to be in charge of sustainability and interact with the surrounding community. It was discussed during the focus group interviews that if the event industry and its organizations do not show genuine interest in and responsibility for sustainability, they will risk seeing society moving strongly on legislation [36]. The factor of “green” is still a new for many event operators, meaning they will need to rely on employees who have been trained with green event related knowledge to help create to right atmosphere. According to Rittichainuwat and Mair [32], sponsors perceived the atmosphere and look of green meetings to be somewhat cheaper, or perhaps less exclusive than non-green or traditional meetings.

Successful development of the concept of sustainable events in Thailand will depend on the maintenance of good public relations, and the creation of understanding among community members through visible practices. Support from government is also essential. Currently, government strategy focuses the issue of standards. The aim is in collaboration with the Management System Certification Institute (Thailand) to promote and improve MICE venue standards in the country. The six key strategies under the masterplan include: Strategy 1-Improve Thailand’s MICE venue standards (TMVS) to meet international standards; Strategy 2-Develop human resources related to TMVS; Strategy 3-Advance IT systems for TMVS; Strategy 4-Conduct public relations and marketing promotional activities for the TMVS; Strategy 5-Support the AMVS (ASEAN MICE Venue Standard); Strategy 6-Mobilize the MICE Venue Standard towards sustainability.

Misunderstandings of the principle of event sustainability and lack of appropriate awareness are still problems for event businesses and organizations. The good practices for event sustainability announced by the Thai government are often criticized for being difficult to understand; there is also a deficit in motivation for event operators to get involved in the initiative. Meanwhile, event organizations have not been fully successful in establishing guidelines for industry sustainability [37]. Results from the interviews indicate that event managers need support from the event association organizations concerning the development and use of sustainability standards and certification systems.

Effective communication and proper understanding are essential. Respondents noted that the policy of the country is, in fact, a barrier to solving problems [32,38]. However, in order to maximize on the value that successful sustainable event marketing can bring to the country, the government and industry operators should work to avoid any unnecessary impediments to the processes. The interaction between participating stakeholder groups should be comprehensive and conducive [39]. This implies that politicians and other authorities should be supporting the sustainability system at an overall community level in order to create a demand for concrete sustainability results from the event industry, include some innovative ideas regarding green meeting’s marketing strategy and sustainability policy such as working with vendors or suppliers who use eco-friendly products, serving a vegetarian option and finding a local vendor to provide the printing services for the meetings to save on carbon emissions from shipping [40]. As this develops, clear communication from the government and proper understanding by industry will help avoid the inadvertently creating a situation of distrust among community members.

In addition, maintaining clear understandings, having sound and profitable businesses when starting external sustainability activities is a must. This reality was not overlooked during the interviews with the management of event organizations. The sentiment expressed was that business and community integrated sustainable events start with sound core business operations; the sustainable event is controlled by the organization and integrated in a responsible way with the overall social system. (See Table 6).

Table 6. Summary of interview data.

Topic	Summary of Interview
1. The importance of event sustainable development in Thailand	<ul style="list-style-type: none"> - Sustainability is essential and is one of the standards in the development of the event industry. - The government sector has identified a policy to push the driving of sustainable event operations.
2. The perception of managers towards sustainability in the event industry in Thailand	<ul style="list-style-type: none"> - The policy of the country is a barrier in solving problems of event sustainability in Thailand. - Leaders never pay attention to the sustainable development of the event industry. - Green concepts are still new to this industry so we should equip our staff with green-related knowledge and understanding.
3. Sustainable event development practices and fixtures	<ul style="list-style-type: none"> - The venue has recognized the importance of sustainable development in the event industry. - The customers are more interested in selecting sustainable packages than they were in the past.
4. Sustainable event development and operations management	<ul style="list-style-type: none"> - A sustainability coordinator works on-site to achieve the sustainable goals of the venue. - The venue can require all staff to be members of the venue club, as they always conduct green activities

5. Discussion and Conclusions

Although there is some research available on the evaluation of convention service attributes [41–43], there is little research examining the assessment of sustainable event development. This study provides empirical evidence on significant issues for event sustainability by comparing the perceptions of Thai people and foreigners on a certain set of criteria. The perceived importance according to all respondents in both the Thai and foreigner groups were studied to examine the interest and understanding that participants have towards sustainability and waste diversion. It is evident that it is not only important for meeting facilities to adopt environmentally sound policies and practices, but also that the attendees are made aware of these policies and practices.

According to meeting planners, items fit into three general categories: (1) energy efficiency; (2) recycling; and (3) sustainable policies. These specific items offer an introductory guideline for meeting planners who have clients that prefer to hold their conferences at locations which make an effort towards being environmentally friendly [17]. The APEX/ASTM Environmentally Sustainable Meeting Standards address specific sustainable elements for nine individual areas within the meeting and event planning process: (1) Accommodation; (2) Audio/Visual; (3) Communication and Marketing Materials; (4) Destinations; (5) Exhibits; (6) Food and Beverage; (7) Meeting Venue; (8) On-site Office; and (9) Transportation [44]. Clearly, based on the joint initiatives from the APEX/ASTM partnership, green trends are beginning to make an impact on meetings.

This research should be of interest to those involved in the event industry in Thailand and should help increase awareness towards issues of sustainable development. The discussion examined emerging issues in sustainable events development in Thailand and it was found that there are distinct patterns in the types of perception held by Thai people and foreigners regarding the importance of 27 selection criteria. The results help to create a better understanding of the way in which the event industry can develop itself while meeting expectations of sustainability, and should be of interest to related event industry practitioners and authorities in Thailand. Attention should be given to environmental education for international participants and stakeholders in the event industry, as education is one of the effective external factors leading to environmental practices [45]. In contrast to studies of environmental behavior focusing on the impact of internal factors [23,46] and the controversy about the role of knowledge as an internal barrier or driver [25,47], some researchers assert the importance of external factors when it comes to social institutions shaping individuals' ways of thinking and behaving. Thus, there are cases to be made for both external and internal factors as drivers for increasing awareness and facilitating practical actions [48,49].

This research examined the views of 500 respective attendees of 18 meeting, conference or tradeshow events in Thailand, thus cannot presume to inference on the views of attendees at all relevant conferences, nor can it speak on green perception in general due to the fact that the size of the sample is not extensive enough and the uniqueness is too great. Further studies on green perception in the event industry with focus given to meeting facilities will be important for maturing the understanding of this diverse industry. The researchers recommend that more studies be conducted on sustainable event development, with special focus given to hotels and venues in Thailand.

This research used qualitative interviews to examine the perspectives of 9 industry stakeholders regarding barriers or problems that might effect the sustainable development of the event industry in Thailand. The results of the empirical study indicate that, at present, government agencies and the private sector are involved in the event industry in Thailand and are the driving force behind sustainable event development; however, there is a number of areas that could provide further support to the cause if they were given more focus, including environmental education and course curriculum, set standards for event sustainability, improved knowledge and understanding of sustainable event development, as well as related national policies and budget management.

Figure 4 illustrates the relationship between effective attributes and shows similarities in views of event sustainability according to the qualitative and quantitative gathered. The attributes can be arranged into 3 overarching groups comprising 7 subgroups. The concentrated overlap represented by Group 1 is categorized as the “most focused” area (Number 1). All stakeholders in the event industry are aware of and understand the attributes within its fold, including: cooperate social responsibility, knowledge, training, policy, investment, recycle/reduce/reuse, practices and green packages. Group 2 is designated as “more focused” (Number 2,3,4). These issues have drawn the attention of some parties in the sustainable event industry, but not all stakeholders. Within this group, attributes include awareness, budget, strategy, course, education, trend, criteria, certified, standard, volunteer service and maintenance. Group 3 is classified as “less focused” (Number 5,6,7), with reference given to issues with little understanding and lack of awareness. Directing focus here should serve to promote the development of event sustainability in Thailand. The often missing attributes found within this segment include research, stakeholders, support, economic development, motivation, leaders and investment.

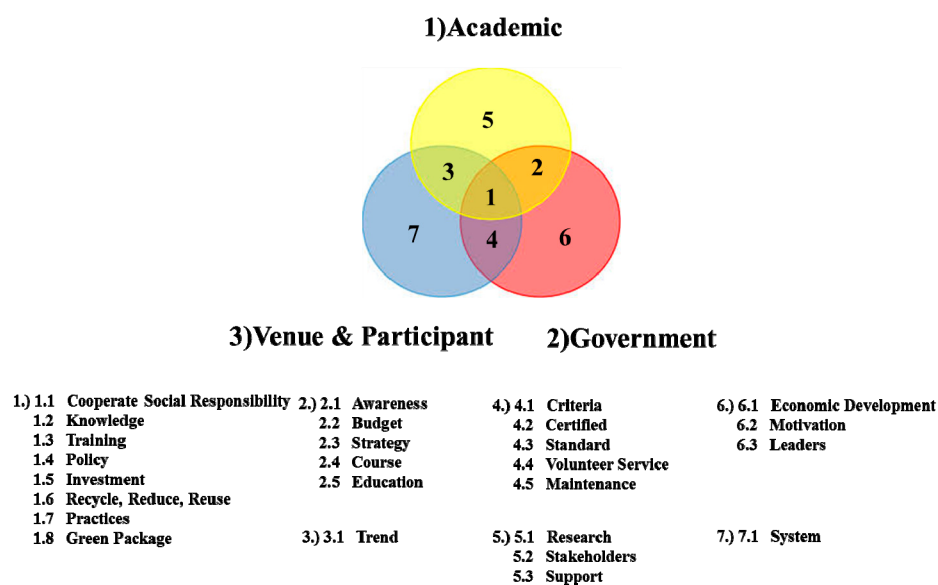


Figure 4. Similarities in views on event sustainability in Thailand.

Based on these results, the following recommendations are made to improve sustainable event development in Thailand and offer guidance to the industry as it strives to reach its potential and gain a more prominent position on the world MICE stage.

First, more environmental education and course curriculum for meeting and event planners is necessary, as education is one of the most effective external factors leading to environmental practices [45,50]. If educational opportunities are offered, individual's willingness to implement green practices will increase. This may underscore the need to use education systems to build more knowledge, which is more likely to be effective in encouraging meeting planners to behave according to environmentally friendly practices [50]. However, simply increasing the opportunity for education may not go far enough; indeed, those who design educational programs should carefully consider the most necessary contents and best manner of presentation for industry professionals seeking advanced practices and updating their knowledge. The educational programs should engage meeting planners who have decision-making power and coordinate with stakeholders and businesses who participate in meetings or events [50]. In short, there should be institutional support for the education and training sessions provided to meeting and event industry practitioners, with subject matter that addresses the issues of organizing green and sustainable meetings and events.

The first and only comprehensive standards for environmentally sustainable meetings was created under a partnership between the Convention Industry Council's Accepted Practices Exchange (CIC APEX) and the American Society for Testing and Materials (ASTM) International. These standards are composed of nine individual items (sometimes referred to as "sectors") that address the scope of the meeting and event planning process. Their approval for publication by ASTM International, means that they are recognized by an ANSI-accredited (American National Standards Institute) international standards setting organization [51]. In addition to this initiative, the MEEC industry recognizes that there are many other governing bodies available to help those that plan, host, and supply meetings. The International Association of Conference Centers (IACC) has a "Code of Sustainability" that provides sustainability guidelines for convention centers. The Partnership for Global Sustainable Tourism has a list of criteria not only applicable to accommodations and tour operations, but to tourism in general. However, all of these certifications, guidelines, and recommended practices are created by different programs with different sets of sustainable criteria [52]. Today, third-party validated green certification and eco-labels are everywhere, serving to verify that a product or service meets a specific set of green standards [53]. The Eco-label Index currently tracks 435 eco-labels many of which are in competition with one another. Duke University's Corporate Sustainability Initiative estimates that between 25% and 33% of all eco-labels are redundant (Corporate Sustainability Initiative). This can offer advantages as well as disadvantages; because, although it can ensure the highest of standards it can also be confusing to consumers. Nevertheless, green certification is a good indicator that specific environmental claims have been verified by an entity other than the establishment itself [53].

The finding of that there is a lack of knowledge and understanding of event sustainable development indicates that among those who are involved in the MICE industry in Thailand, there is a need to enhance the level of knowledge of the key concepts and issues of greening in the industry. In particular, meeting planners are encouraged to be aware of the widely adopted environmental certification schemes as means of rewarding ecological actions and possessing adequate knowledge on the issue [50]. With education systems offering the most likely solution to providing the type of training needed, emphasis should be given to developing programs which can effectively encourage meeting planners to behave in an environmentally friendly manner [50]. Encouragement of awareness of environmental issues among stakeholders and promotion of good communication are the most significant ways to contribute to the furtherance of greening in the meeting and event industry [9,50]. In Tinnish and Mangal's [54] discussion of the consumer market, they noted that sensitivity to issues related to sustainability does not always translate into purchasing behavior. It is the responsibility of sustainable event marketers to use the meeting's communications, messaging, and promotional tools to transform participants' mindsets into actions, behavior, and activities. By creating a sustainable event,

planners can change behavior. Participants can be provided with behavior cues through the messaging and the execution of the event. Though stakeholders, employees and suppliers are important in value alignment, another critical group is senior management. Planners must recognize that investigating the values, attitudes, and behaviors of senior managers toward sustainability can enhance understanding of the challenges related to implementing event sustainability within organizations, and can help drive the integration of sustainability into activities [54]. Meeting attendees were willing to pay more if the convention center staff was educated on sustainable options within the convention center. This due to the inconveniences that arise from the lack of standardized certifications and the overwhelming influx of information with regard to green and sustainable issues. Strick and Fenich [51] note that it is difficult for both planners and attendees to determine which certifications are credible and which are not; therefore, having an educated staff available might be the next best alternative. Strick and Fenich [51] also state that research is necessary for consumers to fully understand the existing certifications available; so again, an educated staff available to answer questions might be a more appealing option for attendees.

With respect to the issues regarding policy and budget management, Thailand has been negatively impacted by the problems of political instability and terrorism in the southern part of the country. These events have been frequently reported by the international media and other secondary information sources, and are among the major factors making Thailand a less attractive destination [38,55]. Indeed, the political stability of the host nation is a very important point of consideration for international MICE organizations [38,56]. The government should take full responsibility and conduct appropriate action to avoid a worsening of crises [38]. Additionally, widely recognized certification schemes, along with industry partnerships, operate as stimuli to many stakeholders, encouraging them to participate in green-friendly practices [50]. Previous research has noted that financial issues (both cost and time involved) have emerged as major barriers to greening [21,50]. The results from this study offer convention centers suggestions on the variables associated with site selection from a “green” perspective. Considering the positive impact meetings and conventions can have on local economies [57,58], the MICE industry should be looking at the issue of sustainability as an opportunity to increase competitive advantage and secure business. While including all of the elements comprised in programs such as the Green Globe Certification may not be feasible, convention and meeting venues, as well as meeting planners, should consider incorporating as many sustainable practices as they reasonably can [18]. These plans, beginning from information-based approaches and moving to action-based approaches, could be applied to the case of Thailand to help prepare for concerned parties to take appropriate actions and building confidence among international prospects [38].

This study recognizes the limits it was subject to due to constraints in time and resources. Purposive sampling was used together with the recommendations of tourism/event scholars to identify key informants; however, it is noted that such an approach may not cover a wide enough representation of exhibitors and participants in the event industry. The event industry should be looking at the issue sustainability to give them an added competitive advantage in securing business. And although including all of the elements of programs such as the Green Globe Certification may not be feasible, convention and meeting venues, as well as meeting planners, should consider incorporating aspects of sustainable practices that are at least reasonable. Further studies on green perceptions within the event industry in terms of meeting facilities will be important for enabling a fuller understanding of this diverse industry. The researcher recommends more studies be conducted involving event sustainable development, with special focus given to hotels and venues in Thailand.

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