Article

Measuring Sustainable Indigenous Tourism Indicators: A Case of Mah Meri Ethnic Group in Carey Island, Malaysia

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Abstract: Sustainable tourism emphasises responsible utilisation of economic, socio-cultural and environmental resources for tourism development. Extant literature in sustainable tourism leans towards subjective and qualitative description in explaining the dynamic nature of the trans-disciplinary indicators of sustainability. However, few mechanisms have been proposed or developed to quantify the indicators measuring sustainable tourism in an indigenous ethnic context. The current study measures 61 sustainable indigenous tourism indicators of the Mah Meri ethnic group that comprise three constructs, namely, community resources, community development and sustainable tourism. Simple random sampling was employed for data elicitation and a weighted average score using R software as the basis of analysis was used to produce a sustainable indigenous tourism barometer (SITB). The study identifies 11 sustainability dimensions from the initial three main constructs that are treated as the relationship aspects in this study. Based on the Sustainable Indigenous Tourism Barometer (SITB), community participation, empowerment, economic and socio-cultural sustainability are found to be the main influencing dimensions of sustainability of the Mah Meri ethnic group. However, natural resources, financial resources and environmental sustainability indicated weaker relationships in explaining sustainability of the Mah Meri ethnic group. Based on the SITB, the results demonstrate that the Mah Meri ethnic group are a "potential sustainable" tourism stakeholder.

Keywords: indigenous tourism; cultural commoditization; sustainability; Mah Meri community

1. Introduction

Tyrrell and Johnston [1] argued that the tourism literature has failed to provide a generally accepted theoretical framework of sustainable tourism. Swarbrooke [2] also noted that there is no widely accepted definition of sustainable tourism. Although there is insufficient specific underpinning theory to address sustainable indigenous tourism, a green paradigm has been the backbone for sustainable development studies. The green paradigm stresses that humans are part of nature versus the argument of the dominant Western environmental paradigm, which contends that humans are apart from nature [3]. The United Nations' Brundtland Commission defined sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" [4]. Sustainability makes and maintains the conditions under which living things and nature (flora and fauna)

can co-exist in productive harmony, that permit fulfilling the social, economic, environment and other requirements of present and future generations [5]. As described by Asmar [4], the idea of sustainability relies on three dimensions; social, economic and environmental, whereby making sure that human beings have and will continue to protect nature, human life and the environment, as the main thrust.

Sustainability, therefore, is generally understood to be a combination of social, economic and environmental aspects. The model of the three pillars of sustainability was first proposed in the World Summit on Social Development 2005. These three pillars of sustainability are a powerful tool and crucial to human life. If any pillar is weak, then the system as a whole is unsustainable [6].

Social sustainability is the core component within the model. Basically, the concept of social sustainability is about creating and maintaining a reasonable quality of life for people in the entire community or, in the context of this paper, the whole ethnic group. Financial and environmental factors are important associated components. Generally, social sustainability involves protecting the mental and physical health of all people, encouraging ethnic groups, treating all people fairly, and providing essential services and meeting basic needs [7].

Sustainability becomes a key challenge in developing quality tourism products without negatively affecting the natural and cultural environment that maintains and takes care of them. At the heart of sustainable tourism is a set of implicit values that determine and integrate economic, social and cultural goals [8]. Participation of all relevant stakeholders as well as strong political leadership is required to develop this form of tourism, and to ensure wide participation and consensus building. Any achievement of sustainable tourism is continuous development and it requires regular monitoring of measures to introduce the necessary preventive and/or corrective measures. It also means tourism is economically viable but does not destroy the resources on which its future will depend, notably the physical environment and the social fabric of the host ethnic group [9]. Thus, the aim of this study is to measure the sustainability attainment level of the Mah Meri ethnic group though a sustainability barometer. A sustainability barometer can be defined as a tool to measure a society's well-being and progress toward sustainability by incorporating a set of sustainability indicators [10].

The remainder of this paper proceeds as follows. In Section 2, the literature on culture and indigenous tourism, social exchange theory, Murphy's Ecological Model and sustainable tourism indicators and the sustainability barometer are reviewed. Section 3 describes the research methodology, including study site description, data collection, sampling and indicator development. Quantitative outcomes are followed by qualitative results and their interpretations are presented in Section 4. Section 5 presents the conclusions including limitations and suggestions for future research.

2. Literature Review

2.1. Indigenous Tourism and Culture

Indigenous tourism is a form of (generally) rural tourism that allows the tourist to visit indigenous settlements and experience the daily lives of their members. Indigenous tourism is the focus of this study, because it is considered as an important tool in the development of rural ethnic groups, due to the significant positive impacts on the hosts [11]. According to Dernoi [12] and Chan et al. [13], tourism not only allows the ethnic group to enjoy greater economic benefits, but also helps maintain the next generation of the ethnic group in rural areas, instead of encouraging them to migrate to towns.

Boyle [14] argued that the majority of indigenous tourism studies are descriptive and mainly presented in the form of periodic reports and conference papers with little in-depth, empirical and analytical study. Therefore, it can be concluded that there has been a lack of specific studies, which attempt to focus on level of community resources and community development, which influence sustainable indigenous tourism practice. Butler and Hinch [15] revealed that there are clear identifiable gaps within the indigenous tourism spectrum and identify the academic domains that need to be addressed to strengthen the body of knowledge. To bridge this knowledge gap, the present study will investigate and measure indigenous ethnic group's sustainability in tourism.

Even though several studies have sought to identify the impacts of indigenous tourism, the outcomes were primarily focused on the perception of the host ethnic group and the tourists. Evidence shows that very few studies have attempted to understand real factors required to run tourism business from an indigenous peoples' point of view to develop sustainable practice. Thus, it can be said that there has been no attempt to create a model of sustainable indigenous tourism. Focusing specifically on the perceptions of indigenous people is very important, as they are the industry's key players.

Cultural aspect in indigenous tourism has been a popular research area highlighting the indigenous people and their unique and authentic lifestyle [16]. According to Kunasekaran et al. [17], the development of tourism strongly depends on their ethnicity, heritage and festivals. Butler and Hinch [15] also mentioned that culture has emerged as a powerful attraction not only for tourists but also for entrepreneurs, government agencies and academic researchers.

Many scholars agreed that the cultural product has proven to be a medium in boosting tourism development [18–20]. Besemenji et al. [21] said that tourism emerged as a good way of preserving customs and culture, but only if the right people are involved and if tourism does not become a business for some individuals. This is the way to introduce their culture to the world and thus contribute to its preservation. Several scholars argued that commoditization is the only way to sell the indigenous culture to tourists [22,23]. From the cultural tourism perspective, commoditization can enhance local economic growth and develop traditions by reducing poverty levels and increasing the inherent value [24]. However, Cohen [18] and Williams and Gonzalez [25] have criticized cultural commoditization which is seen as a mass tourism product that can ultimately cause the loss of authenticity and inherent cultural values.

2.2. Social Exchange Theory

According to Homans [26] as cited by Zafirovski [27], exchange theory is based on the foundation that human behaviour or communal interaction is an exchange of activity, both tangible and intangible. Social exchange theory is the systematic process by which an individual benefits from a sequence of interactions with society. In this interaction, the assessment that is given to the third party is more valuable than the costs to the giver or vice versa. In other words, an individual creates independent interaction with society yielding a beneficial outcome, otherwise the interaction would be of little value. Therefore, exchange theory scrutinizes the sequence of creation and continuity of mutual social relations or communal indulgence among humans. Exchange theory is about individuals who create and follow social relations according to their expectations that such relations will be mutually advantageous. The initial motivation for social interaction is provided by the exchange of benefits, intrinsic and extrinsic, independent of normative obligations [27,28]. Thus, in this study, the relationship of expected tourism benefits and indigenous community's participation is measured.

2.3. Murphy's Ecological Model

The branding of Murphy's Ecological Model (1983) as the mother theory by Beeton [29] demonstrates that this model is a dominant theoretical reference for community and tourism interrelationship studies. Murphy's ecological model which is frequently used to explain the relationship between tourism and local ethnic groups emphasizes participation of the local ethnic group in comparison to the outsiders by taking a geographical approach when discussing such groups. Murphy's ecological model also stresses that the local ethnic group's participation in various stages of planning and implementation will determine a holistic ethnic group development equipped with ethnic group participation and empowerment. The Mah Meri community embedded with strong cultural and natural resources justifies the usage of Murphy's model which emphasises people and environmental aspects in developing tourism.

2.4. Indicator and Barometer

To understand the achievement or failure of indigenous ethnic groups in tourism, indicators are needed as a measurement tool [30,31]. A barometer is seen as a tool which assembles all the indicators and measures the overall sustainability score. The barometer can be used to measure human sustainability, ecosystem sustainability, tourism sector's sustainability or a society's sustainability [10]. A combination of all these elements can also be measured through the barometer. According to Asnarulkhadi [32], an indicator is a sign, index or signal that visualizes a scenario or system. The inadequate literature on sustainable indigenous tourism indicators leads to adaptation of the indicators from other approaches to sustainable tourism development alongside community development indicators. Almost all the indicators proposed by the developmental organisations rely on the basic economic, socio-cultural and environmental pillars suggested in the Brundtland Commission, 1987. Table 1 shows the commonly used indicators in sustainable tourism studies.

Table 1. Indicators used in sustainable tourism studies.

Agency/Author	Indicator	Dimensions
The United Nation Commission of Sustainable Development (UNCSD)	Indicators of sustainable development (2007)	Social, economy, ecology
Weaver and Oppermann	Candidate Sustainable Tourism Indicators (2000)	Social, economy, cultural, environmental, management
Doris Padmini	Sustainable Tourism Development Indicators for Malaysia (2004)	Rural/urban environment, nature, historical buildings, cultural traditions
Choi and Sirakaya	Sustainable Indicators for Managing Ethnic group Tourism (2006)	Economy, social, cultural, ecology, politic, technology
Asnarulkhadi	Sustainable Ethnic group Indicator (2003)	Economy, social, environment

The United Nation Commission of Sustainable Development (UNCSD) (2007) has developed indicators focusing on social, economic and ecological dimensions. Weaver and Oppermann [3] suggested a similar set of indicators with the addition of a management dimension. These scholars believe that systematic tourism management skills within an ethnic group and existence of tourism-related laws are important criteria to ensure sustainable tourism. Padmini [11] suggested sustainable tourism indicators for Malaysia which addressed specific dimensions like rural/urban environment, nature, historical buildings and cultural traditions. These dimensions are found to skew the focus of benchmarks more towards environmental sustainability issues.

3. Methods and Materials

3.1. Study Site

Generally, the Mah Meri ethnic group can be found in the rural areas of Selangor, Malaysia. However, this ethnic group is not isolated from the other major communities and their communities are not far from urban locations. The majority of the ethnic group can be found in Carey Island, divided into five small settlements or villages. Eight other villages are scattered around Kuala Langat and Klang districts. Figure 1 below shows the location of Carey Island in the state of Selangor.

Mah Meri Cultural Village, with a size of 346 acres, is the dominant settlement of the Mah Meri ethnic group on Carey Island. This is the first village that can be reached by outsiders from the main road from Banting and Teluk Panglima Garang areas. One of the earliest references to Carey Island was by Nowak [33] noting that during the 1900s about 20,000 acres out of its 35,000 acres of mangrove and rainforest were converted into commercial oil palm plantations. The ecosystem of Carey Island resources is in danger with the depletion of the mangrove forests [34]. This large scale transformation has caused destruction of basic resources, extinction of flora and fauna and disruption of natural ecosystems. Areas which used to be accessed for fishing, hunting and recreation are not accessible

anymore because of the change in the ecological system which is reflected in the musical, material and cultural contents of the Mah Meri's performances [35].
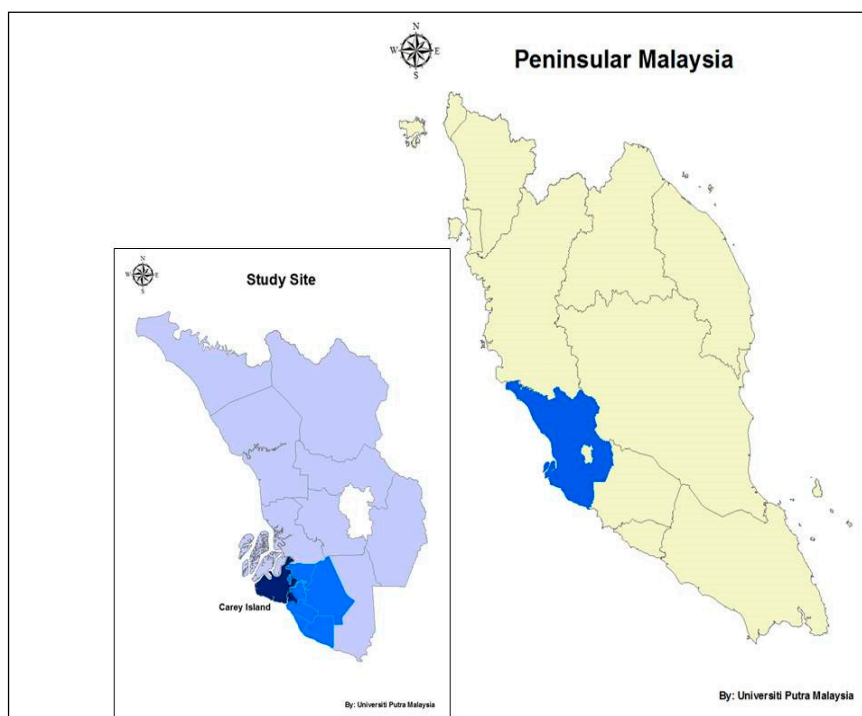
Figure 1. Map of Carey Island.

3.2. Sampling, Data Collection and Analysis

The sampling design that was selected for this research was a simple random sampling method. This sampling technique ensures each Mah Meri had an equal chance of being selected in the sample. From the information given by the Tok Batin (head) of the village, the total population of the village was 450 people. These 450 residents were from 91 families staying in the village. From this number, about 270 people (excluding children and teenagers below 16 years old) were eligible to be selected as respondents. Thus, from this population of 270, a sample size of 159 should be sufficient to represent the population with margin of error of 5% and a confidence interval of 95%. The data were analysed using R software version 3.2.4 of The R foundation (Vienna, Austria, 2016). Descriptive statistics were mainly utilized to calculate the mean scores and weighted average values. Addressing the limitations of a small population and sample size of the Mah Meri community, qualitative data were also obtained to strengthen the quantitative component.

3.3. Sustainable Tourism Indicators Development

The study used 61 indicators to measure the sustainable indigenous tourism practice based on the perception of indigenous ethnic group. Three relationship aspects used a total of 61 indicators to represent the perceptions of the indigenous ethnic group: (i) ethnic group resources (21 indicators developed from qualitative data); (ii) ethnic group development (26 indicators developed from Arnstein [36], Zimmerman [37] and Aref et al. [38]; and (iii) sustainable tourism (14 indicators developed from Weaver and Oppermann [3], Padmini [11] and Choi and Sirakaya [39]). The 21 indicators of ethnic group resources are segregated into five dimensions: cultural resources, human resources, financial resources, infrastructure resources and natural resources. The 26 indicators of the ethnic group development aspect are segregated into four dimensions: participation, empowerment, carrying capacity and self-reliance. As for the sustainable tourism aspect, 14 indicators are segregated into three dimensions: economic, socio-cultural and environment sustainability. The possible scores for the indicators were 1–5.

The study used the mean scores, weights, and weighted scores of the indicators to measure the sustainability of the indigenous tourism practice of the Mah Meri ethnic group in Malaysia as suggested in Tsaur et al. [40]. The respective weights of the indicators were calculated using the following formula:

Indicator weight (w_{ij}) = (Mean score of each indicator/Total indicators mean scores) × 100

To determine sustainability, weighted scores of indicators within three relationship aspects were found by using the following equations.

$$y_{ij} = \frac{r_{ij} - 1}{m} w_{ij}, \tag{1}$$

where "y_{ij}" is the weighted score of the j-th indicator in the i-th aspect; "r_{ij}" is the mean score of the j-th indicator in the i-th aspect; and "w_{ij}" is the weight of the j-th indicator in the i-th aspect, m explains the four intervals of sustainability barometer.

$$y_i = \sum_{j=1}^{k} y_{ij}, \tag{2}$$

where "y_i" is the sum of weighted scores for the *i*-th aspect; and "*k*" is the number of indicators included in the i-th aspect.

$$y = \sum_{i=1}^{3} y_i, \tag{3}$$

where "*y*" is the sum of weighted scores for the tourism development in destination.

To measure the attainment of sustainability, the Barometer of Sustainability proposed by Prescott-Allen [41] is utilized. Based on the barometer, the final scores were divided into four intervals, where $0 < y < 25$ was classified as "unsustainable"; $25 < y < 50$ was classified as "potentially unsustainable"; $50 < y < 75$ was classified as "potentially sustainable"; and $75 < y < 100$ was classified as "sustainable". According to the degree of sustainability, four intervals were proposed by Prescott-Allen [41] to identify the sustainability level for relationship aspects and dimensions. Interval scales denoted the indicator mean scores between 1 and 5, where 1.0–2.0 denoted unsustainability, 2.1–3.0 denoted potential unsustainability, 3.1–4.0 denoted potential sustainability, and 4.1–5.0 denoted sustainability.

To determine the contribution to sustainability from a relationship aspect, the achievement scores were obtained by the following equation,

$$D_i = \frac{y_i}{w_i} \times 100\%, \tag{4}$$

where w_i is the sum of weight, y_i is weighted scores, and D_i is the *i*-th relationship aspect.

4. Results and Discussion

Table 2 shows the mean scores and weights of the indicators for sustainable tourism development in the Mah Meri ethnic group. The perceptions of the ethnic group on the importance of the resources were measured through five main dimensions; cultural resources, human resources, financial resources, infrastructure resources and natural resources. The mean scale obtained is derived from the data collected using a 5-point Likert scale (strongly disagree to strongly agree).

Table 2. Weighted scores of indicators for sustainable tourism development in Carey Island.

Relationship Aspect	Aspect Mean Score and Weight	Dimension	Dimension Mean Score and Weight	Indicators	Mean Score	Weight	Weighted Score
Ethnic group Resources	3.87 33.63	Cultural Resources	4.64 9.72	Woodcarving is an important cultural attraction of Mah Meri	4.71	1.97	1.83
				Weaving is an important tourism product of Mah Meri	4.61	1.93	1.74
				Ari Moyang can pull many visitors to this village	4.71	1.97	1.83
				Uniqueness of Mah Meri dance is an important cultural attraction of Mah Meri	4.56	1.91	1.70
				Mah Meri's willing to maintain culture for tourism development	4.63	1.94	1.76
		Human Resources	4.33 10.89	Human resources are important for tourism	4.34	1.82	1.52
				Strong indigenous knowledge is important for tourism	4.31	1.81	1.50
				Older generation is willing to teach heritage to the youngsters	4.29	1.80	1.48
				Ancestral heritage must be preserved for tourism	4.31	1.81	1.50
				Youngsters are willing to learn indigenous knowledge from older generation	4.35	1.82	1.53
				Woodcarving, dancing and weaving skills important to attract tourists to this village	4.39	1.84	1.56
		Financial Resources	2.87 4.82	Adequate money to run tourism	2.91	1.22	0.58
				Use savings to develop tourism	3.1	1.30	0.68
				Receive financial contribution from government to develop tourism	2.73	1.14	0.49
				Receive financial contribution from middleman to develop tourism	2.75	1.15	0.50
		Infrastructure Resources	3.98 5.01	Adequate public facilities to attract tourists	3.85	1.61	1.15
				Public facilities are in good condition public facilities	3.93	1.65	1.21
				Accessibility to this village is satisfactory to ensure tourists arrival	4.16	1.74	1.38
		Natural Resources	2.53 3.18	Reserves of Nyireh Batu are adequate for carving	1.72	0.72	0.13
				Reserves of Bakau are adequate for carving	1.82	0.76	0.16
				Reserves of Mengkuang are adequate for weaving	4.05	1.70	1.29
Ethnic group Development	3.82 42.05	Participation	3.90 14.73	Recognized and valued as an equal partner before any tourism development	4.17	1.75	1.39
				Ethnic group leader (Tok Batin) consults the ethnic group before taking any decision	4.12	1.73	1.35
				Tourism infrastructures in this village developed after consulting with the residents	3.93	1.65	1.21
				Tourism program and project procedures are clear and accessible	3.84	1.61	1.14
				All ethnic group members have the opportunity to participate in tourism	3.92	1.64	1.20
				The uniqueness of the ethnic group is appreciated in implementation stages	4.15	1.74	1.37
				Volunteers valued	3.3	1.38	0.80
				The ethnic group is well resourced to participate	3.85	1.61	1.15
				Understanding, knowledge and skills developed to encourage participation	3.86	1.62	1.16

Table 2. *Cont.*

Relationship Aspect	Aspect Mean Score and Weight	Dimension	Dimension Mean Score and Weight	Indicators	Mean Score	Weight	Weighted Score
Ethnic group Development		Empowerment	3.98 13.35	Involved in tourism planning	3.93	1.65	1.21
				Tried to improve tourism service	4.1	1.72	1.33
				Involved in tourism evaluation and recommend improvement steps	3.84	1.61	1.14
				Took part in tourism programs during tourists visit	4.07	1.71	1.31
				Encouraged other villagers to participate in tourism	3.97	1.66	1.24
				Able to control tourism development in this area	3.86	1.62	1.16
		Capacity building	3.76 7.88	Have access to internal resources like nyireh batu, mengkuang and forest amenities	3.61	1.51	0.99
				Know the place and way to obtain the resources to develop tourism	4.12	1.73	1.35
				Have access to financial resources to develop tourism	3.61	1.51	0.99
				Adequate training to improve the knowledge and skills of tourism management	3.71	1.56	1.05
				Platform available to provide training to others	3.74	1.57	1.07
		Self-reliance	3.63 6.09	Independent to do business without relying on outsiders	3.53	1.48	0.94
				Can run tourism successfully by being diligent	3.75	1.57	1.08
				Able to sustain in tourism because independent	3.79	1.59	1.11
Sustainability dimensions	4.07 24.32	Economic sustainability	4.16 10.46	Employment has increased from tourism	4.16	1.74	1.38
				Able to save money from the income gained from tourism-related employment	4.2	1.76	1.41
				Ethnic group economy stronger because of tourism	4.18	1.75	1.39
				Tourism-related employment in this village enhanced purchasing-power resulting in better quality of life	4.1	1.72	1.33
				Employment generated by the tourism industry in this village will prevent the younger generation from migrating to the towns and cities	4.12	1.73	1.35
				Tourism gives me a sense of future generation security	4.2	1.76	1.41
		Socio-cultural sustainability	4.46 9.34	Tourism builds stronger ethnic group relationships	4.08	1.71	1.32
				Proud of being appreciated by outsiders/tourists	4.84	2.03	1.95
				Tourism allows preserving the culture	4.55	1.91	1.69
				Better life style practiced after emergence of tourism	4.41	1.85	1.58
				Communications with tourists has given a break from routine job	4.41	1.85	1.58
		Environmental sustainability	3.59 4.51	The village is cleaner because of tourism	3.5	1.47	0.92
				Awareness of cleanliness has increased because of tourism	3.52	1.48	0.93
				Tourism has created a beautiful image and environment of the village and ethnic group	3.75	1.57	1.08
Total sustainability score					238.55		

Cultural resources have been the most important assets of the Mah Meri ethnic group in running tourism successfully. Woodcarving, weaving, Mah Meri dance and Ari Moyang (ancestral day) are considered as treasures that determine the identity of the ethnic group. For this dimension, high mean values from 4.56 to 4.71 were obtained. From the values, woodcarving and Ari Moyang (both 4.71) were considered as the main cultural products of the ethnic group. The mean value of 4.63 reveals that the ethnic group was also willing to defend and maintain their culture for tourism development. Opermann [42] also agreed that culture is the primary attraction of indigenous ethnic groups but their key challenge is to protect their unique culture.

Similarly, for human resources, the ethnic group generally agreed that their personal skills and indigenous knowledge are important to develop tourism [43]. High mean values of 4.31 to 4.39 recorded shows that the rural ethnic group knows the importance of possessing the skills of woodcarving, dancing and weaving that will be of value to run tourism. This scenario is supported by Wearing and Harris [44], who stated that the existence of tourism enables youths in the indigenous ethnic group to learn from their elders. The need to teach and learn indigenous knowledge across generations is also encouraged by the ethnic group to maintain tourism continuity for the next generation [45]. Indigenous knowledge teaching and learning alone is not enough for the success of tourism. The ethnic group should also be supported by developing internationally-focused skills [46,47].

Financial resources are also an important strength of the ethnic group in performing tourism activities in their village. However, the results show that the ethnic group is not well resourced financially. A mean value of 3.10 reveals that the ethnic group tries to save its own money to run businesses. Score values of 2.73 and 2.75 show that the ethnic group barely receives any financial support from the government and agencies. However, initial investigation with the key informants revealed that the ethnic group is provided with woodcarving and weaving materials although no cash is delivered. The government can help the indigenous communities by easing the existing rules and regulations so that their entry in tourism is not unnecessarily difficult [48,49].

In terms of infrastructure resources, the respondents are generally satisfied with the infrastructure in the village, especially cultural and translation centres. Although the researchers found that public facilities such as toilets and a football field were in bad condition, the ethnic group was satisfied with the condition of the infrastructure (mean 3.93). The mean value of 4.16 shows that accessibility to the village was good and the condition of the roads within the village is well maintained. Goodwin [50], who found similar outcomes, mentioned that building of a lodge had resulted in the development of the road which brought a bus service to the isolated Shangan ethnic group in Zimbabwe. Investments in infrastructure development that can provide livelihood benefits can be made using tourism as a tool [51].

Natural resource is an important element of indigenous tourism because the ethnic group live very close to the natural environment [52]. Thus, they are heavily dependent on the natural resources to run tourism. The scarcity of Nyireh Batu (*Xylocarpus moluccensis*) (1.72) and Bakau (*Rhizophora sp.*) (1.82) is a big concern for the ethnic group. Without these woods, it is almost impossible to do woodcarving. Ironically, this is not the case for the weavers as the resource of Mengkuang (*Pandanus sp.*) is adequate, as proven by a significantly higher mean value of 4.05. Oswald et al. [53] argued that the indigenous communities are highly dependent on natural resources but aggressive harvesting may cause the forest to fail to provide them with their daily requirements. Goodwin [50], Siow et al. [54] and Nair et al. [49] suggested that the government can assist the indigenous communities in providing them with the resources that are lacking to ensure tourism sustainability.

Community development is measured by analysing dimensions of participation, empowerment, capacity building and self-reliance. The community development indicators are treated as community development outcome, not community development processes. Table 2 shows the level of community development of the ethnic group according to the identified dimensions.

Participation is considered as one of the important dimensions in community development measurement which can reveal the state of the ethnic group when there is an intervention of an outsider. Table 2 shows that the ethnic group is a willing participant in tourism activities and business (3.30 to 4.17) in collaboration with outsiders or within the ethnic group members. The ethnic group felt that they are recognized and valued as equal partners by outsiders (3.94). They also agreed (4.17) that the villagers must be consulted before any tourism developmental projects take place and the Tok Batin will discuss with the ethnic group before any decision are made (4.12). A higher mean value of 4.12 shows that the uniqueness of the ethnic group is appreciated in developmental implementation stages. However a different case is experienced by the indigenous ethnic group in Lennox Island First Nation. Although the ethnic group is involved in tourism developmental programs, they still felt that they were powerless and unable to make key decisions [55,56].

Slightly lower mean values of 3.84, 3.92, 3.30, 3.85, and 3.86, respectively, were recorded relating to whether tourism project procedures are clear, all ethnic group members have the opportunity to participate in tourism, volunteers are valued, the ethnic group is well resourced to participate and understanding, knowledge and skills developed to encourage participation. The lower values show the absence of genuine participation of the ethnic group in tourism development [36]. The mediocre mean score reflects participation level that reaches only tokenism stage as stated in Arnstein's Ladder of Participation Model.

In terms of empowerment, the mean scores recorded are similar to the participation dimension. Many of the respondents agreed that they are involved in tourism planning and have tried to improve tourism in their area (3.84 to 4.10). Average mean values were also recorded for ability to make decisions without relying on others (3.96) and control of tourism development (3.86). This result shows that they are not fully empowered to make decisions and the decisions are still subject to outsiders' influences. The ethnic group however always took part when tourists groups visit them (4.07) and always tried to encourage other villagers to take part in tourism (3.97). The result clearly shows that the ethnic group does not play a key decision making role. This is a normal situation for many indigenous communities because the tourism developmental program and funding are usually initiated by outsiders [55]. Thus, the influence of outsiders is always more that the empowerment of the local communities.

The results of the analysis also show that community capacity building is at above average level. Even though natural resources are at a critical level of scarcity, the ethnic group agreed slightly that the access to internal resources like Nyireh Batu, Mengkuang and forest amenities is not constrained. They also believe that they know the place and way to obtain the resources to develop tourism (4.12). However, lower mean scores from 3.61 to 3.74 were obtained to measure access to financial resources and training to develop tourism. This outcome shows that there is no barrier for the ethnic group to possess natural resources but it is difficult for the ethnic group to access financial assistance. Hunt [57] also agreed that financial access barriers can significantly inhibit community capacity building. Tourism development is impossible without achieving capacity building first [58].

Apart from the above-mentioned dimensions, self-reliance is also considered as an important indicator to measure the sustainability of tourism. Average mean values scored show that the ethnic group is self-reliant but still needs the support of outsiders. A mean value of 3.53 was scored for being independent to do business without relying on outsiders and 3.46 for being able to run tourism without depending on government or agencies. The respondents also generally agreed that tourism business can be made successful by being diligent as well as achieving higher level of independence in decision making. Carr [58] agreed that indigenous communities especially the Maoris are not too dependent on the government and always strive to learn western business management skills to achieve success in tourism business.

Economic benefits can always lure an ethnic group to stay in tourism for long periods of time. Table 2 above clearly shows that the ethnic group is economically sustainable where all items have mean score of more than 4.0. Emergence of tourism has created many employment opportunities

although the income is not high and consistent. The indigenous ethnic group also agreed that their economy is stronger than before (4.18) and purchasing power also increased (4.10). The direct impact of this positive development includes upgrading of the rural ethnic group's lifestyle [59]. This scenario is believed to help in preventing the younger generation from migrating to cities to find jobs (4.12) and to provide a sense of economic security created by the existence of tourism. The results show similar findings with other studies on impacts of tourism on local communities. Pérez and Nadal [60] mentioned that tourism can result in positive economic impacts such as increasing employment; building capacity for business and investment; creating a mixture of public and private sector jobs; bringing in money from outside (tourists); and building on community strengths and the successes of the local economy with the indigenous ethnic group.

Similarly, for socio-cultural sustainable dimensions, higher mean values (4.08 to 4.84) obtained prove that the ethnic group is greatly benefiting from tourism. The ethnic group agreed that tourism builds stronger ethnic group relationships. This is evident when all the villagers show strong commitment in cultural tourism activities, especially Ari Moyang. The highest mean of 4.84 shows that the respondents are also proud of being appreciated by tourists for their rich culture. Brown and Cave [61] and Siow et al. [62] mentioned that cultural strength will largely benefit the ethnic group especially in preserving the culture. Apart from utilizing tourism to preserve their culture (4.54), the respondents also strongly agreed that communications with tourists has given them a break from routine jobs. This positive interaction with tourists also created a better lifestyle for the ethnic group. The learning of foreign cultures not only educates the local ethnic group but also allows them to experience interesting lifestyles [63]. In addition, social sustainability involves protecting the mental and physical health of all people, encouraging ethnic group, treating all people fairly, and providing essential services and basic needs [7].

Tourism development in rural areas also often results in positive environmental sustainability. The respondents agreed that tourism created environmental sustainability in their village. The average mean value of 3.50 shows that the respondents agreed that cleanliness of the village is average which is induced by the village residents. The researcher's observation also found that the village is still not clean and no proper garbage collection system had been implemented. Environmental cleanliness if not well managed may result in unsustainable tourism [1]. The respondents were also not so optimistic that tourism has created awareness to keep their village clean (3.52) and that a beautiful image and environment of the village has also emerged (3.75). Similarly, Mason and Cheyne [64] argued that even though a community admits that they enjoy positive economic and socio-cultural impacts of tourism, they have negative perceptions on factors such as tourism-related congestion, environmental degradation and noise levels.

The weights of indicators were obtained from the percentage of the indicators mean scores. The formula is as follows:

Indicator weight = (Mean score of each indicator/Total indicators mean scores) × 100

According to the above formula, the total indicators mean score is 238.55. The weights of indicators for ethnic group resources, ethnic group development and sustainability dimensions were 33.63, 42.05 and 24.32 respectively (Table 2).

Table 3 shows the weighted scores of indicators for sustainable tourism development in the study area. To determine sustainability, scores summarized from the weighted scores of three relationship aspects using Equations (1)–(3).

Table 3. Total weighted of indicators.

Relationship Aspect	Aspect Weighted Score	Dimension	Dimension Weighted Score	Indicators	Indicator Weighted Score
Ethnic group Resources	25.52	Cultural Resources	8.87	Woodcarving is an important cultural attraction of Mah Meri	1.83
				Weaving is an important tourism product of Mah Meri	1.74
				Ari Moyang can pull many visitors to this village	1.83
				Uniqueness of Mah Meri dance is an important cultural attraction of Mah Meri	1.70
				Mah Meri's willing to maintain culture for tourism development	1.76
		Human Resources	9.08	Human resources are important for tourism	1.52
				Strong indigenous knowledge is important for tourism	1.50
				Older generation is willing to teach heritage to the youngsters	1.48
				Ancestral heritage must be preserved for tourism	1.50
				Youngsters are willing to learn indigenous knowledge from older generation	1.53
				Woodcarving, dancing and weaving skills important to attract tourists to this village	1.56
		Financial Resources	2.26	Adequate money to run tourism	0.58
				Use savings to develop tourism	0.68
				Receive financial contribution from government to develop tourism	0.49
				Receive financial contribution from middleman to develop tourism	0.50
		Infrastructure Resources	3.73	Adequate public facilities to attract tourists	1.15
				Public facilities are in good condition public facilities	1.21
				Accessibility to this village is satisfactory to ensure tourists arrival	1.38
		Natural Resources	1.58	Reserves of Nyireh Batu are adequate for carving	0.13
				Reserves of Bakau are adequate for carving	0.16
				Reserves of Mengkuang are adequate for weaving	1.29
Ethnic group Development	30.17	Participation	10.75	Recognized and valued as an equal partner before any tourism development	1.39
				Ethnic group leader (Tok Batin) consults the ethnic group before taking any decision	1.35
				Tourism infrastructures in this village developed after consulting with the residents	1.21
				Tourism program and project procedures are clear and accessible	1.14
				All ethnic group members have the opportunity to participate in tourism	1.20
				The uniqueness of the ethnic group is appreciated in implementation stages	1.37
				Volunteers valued	0.80
				The ethnic group is well resourced to participate	1.15
				Understanding, knowledge and skills developed to encourage participation	1.16
		Empowerment	9.95	Involved in tourism planning	1.21
				Tried to improve tourism service	1.33
				Involved in tourism evaluation and recommend improvement steps	1.14
				Took part in tourism programs during tourists visit	1.31

Table 3. *Cont.*

Relationship Aspect	Aspect Weighted Score	Dimension	Dimension Weighted Score	Indicators	Indicator Weighted Score
Ethnic group Development				Encouraged other villagers to participate in tourism	1.24
				Tried to upgrade tourism knowledge to improve tourism service	1.34
				Able to control tourism development in this area	1.16
		Capacity building	5.45	Have access to internal resources like nyireh batu, mengkuang and forest amenities	0.99
				Know the place and way to obtain the resources to develop tourism	1.35
				Have access to financial resources to develop tourism	0.99
				Adequate training to improve the knowledge and skills of tourism management	1.05
				Platform available to provide training to others	1.07
		Self-reliance	4.02	Independent to do business without relying on outsiders	0.94
				Can run tourism successfully by being diligent	1.08
				Able to sustain in tourism because independent	1.11
				Can run tourism without depending on government or middle man	0.89
Sustainability dimensions	19.30	Economic sustainability	8.27	Employment has increased from tourism	1.38
				Able to save money from the income gained from tourism-related employment	1.41
				Ethnic group economy stronger because of tourism	1.39
				Tourism-related employment in this village enhanced purchasing-power resulting in better quality of life	1.33
				Tourism gives me a sense of future generation security	1.41
		Socio-cultural sustainability	8.11	Tourism builds stronger ethnic group relationships	1.32
				Proud of being appreciated by outsiders/tourists	1.95
				Tourism allows preserving the culture	1.69
				Better life style practiced after emergence of tourism	1.58
				Communications with tourists has given a break from routine job	1.58
		Environmental sustainability	2.93	The village is cleaner because of tourism	0.92
				Awareness of cleanliness has increased because of tourism	0.93
				Tourism has created a beautiful image and environment of the village and ethnic group	1.08

Based on Equations (1)–(3), ethnic group development (30.17) showed the highest weighted scores, followed by ethnic group resources (25.5) and finally sustainability dimensions (19.3). Table 3 reveals that the sustainability score was 74.9.

Based on the Sustainable Indigenous Tourism Barometer (SITB) (Figure 2), the result demonstrated that Mah Meri was classified as a "potentially sustainable" tourism destination. To determine the contribution of each relationship aspect of indigenous tourism sustainability, the achievement scores were obtained by Equation (4).
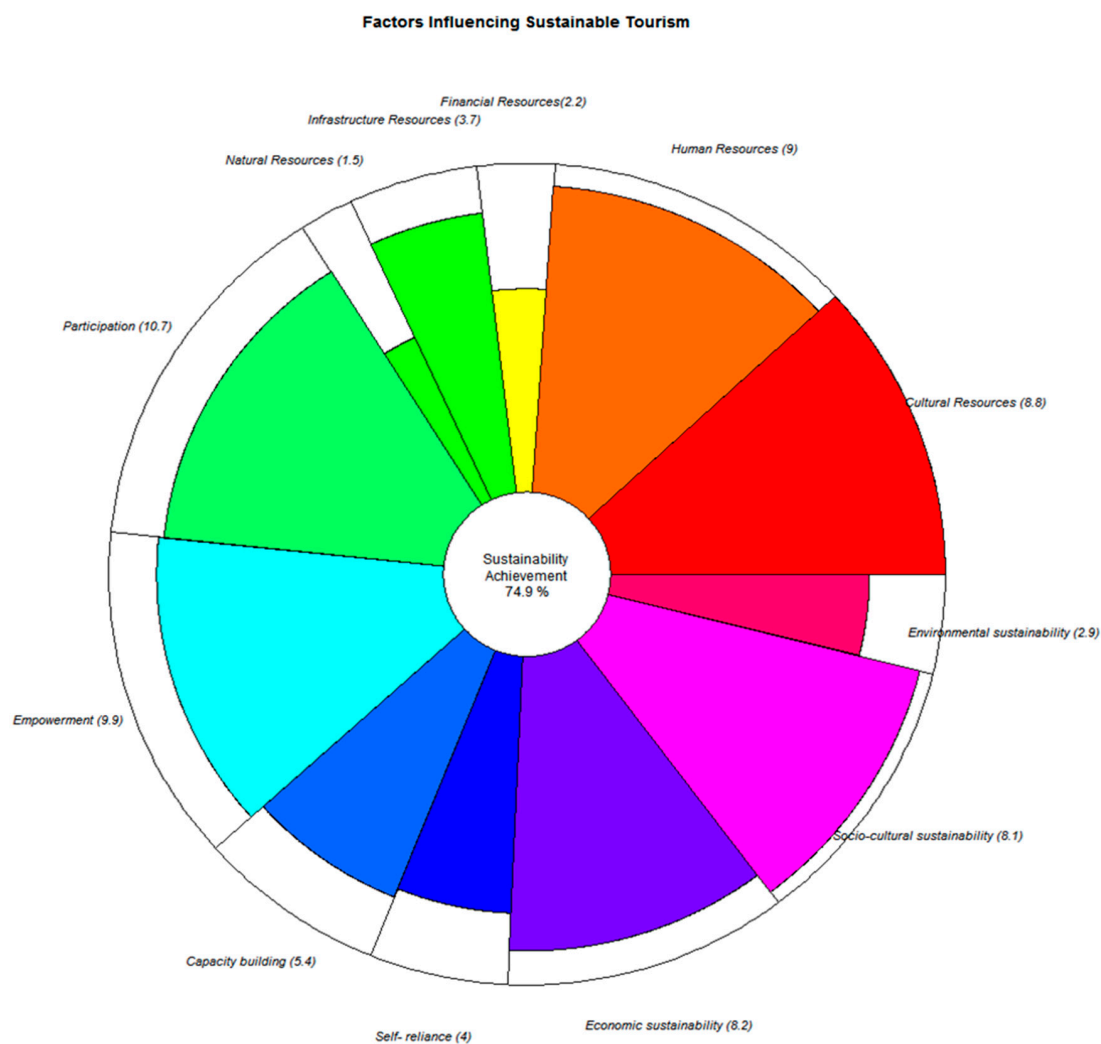
Figure 2. Sustainable Indigenous Tourism Barometer (SITB).

Table 4 represents the contribution to sustainability achievement of the Mah Meri ethnic group from each relationship aspects. The contribution of "sustainability dimensions" on tourism achieved the highest percentage (79.37%) for sustainability achievement. The aspect with the poorest sustainability is "ethnic group development" at 71.76%. This result indicates that the sustainability dimensions of economic, socio-cultural and environmental are the biggest contributors.

Table 4. Sustainability achievement of Carey Island in inter-relationship aspects

Relationship Aspect (D_i)	Weight (w_i)	Weighted Scores (y_i)	Achievement Percentage (%)
Ethnic group Resources	33.63	25.52	75.87
Ethnic group Development	42.05	30.17	71.76
Sustainability dimensions	24.32	19.30	79.37

The outcomes reveal that community participation, empowerment and cultural sustainability are important contributors towards sustainability attainment. The qualitative data analysed do not contradict the quantitative results. As for community participation in tourism and cultural activities, it is still very lively. An ethnic member said that the community always participates in all the cultural activities.

> "Yes...Our culture is well appreciated, everything is ok here. People around here always work together, if there is any celebration, we mutually help each other, clean the streets, share our lawn-mowers; during cultural events, like the Ari Moyang (ancestral day), we work together." (Ethnic member 1, 35-year-old male).

Contradicting ethnic member 1's statement, ethnic member 2 who is a women leader of the village is not so happy with female participation in tourism activities. She is worried about some of the women who are not participating in weaving.

> "I don't know what to tell … They are not joining; they just sit at home. You see here, how many I have to do today (*Pandan* bookmarks) I just do alone until late night … they are all good in weaving … I will pay them if they come and do … They are not working anywhere else, so they can just join me and do this job … at least can earn something. I always help them and give money when they need because they do not have money. When they want to go to hospital I help them by giving money. I don't know what to say." (Ethnic member 2, 44-year-old female)

This statement shows that some of the members of the community are not genuinely participating in tourism activities. They only participate whenever they want or when they are pushed by the leader. When asked if the non-participants in tourism get opportunities to be involved, a respondent said that every member of the community is encouraged to join in tourism activity but there is a separation within the community.

In terms of cultural sustainability, although tourism does not provide economic sustainability to the community, it is regarded as an important tool to preserve the culture for the next generation by the Mah Meri people. When asked if they would give up or quit tourism because the job is not providing consistent financial security, a respondent said financial benefits are not the biggest factor for him to be involved in tourism.

> "Yes. Our income is not consistent. I always thought if I can quit this and go to work in Sime Darby (oil palm plantation) to get monthly salary. No. No, I won't quit, even I if do not get any profit, I will still do tourism. My moyang (ancestor) came in my dream and advised me not to leave tourism no matter what happens. He asked me to keep on carving to preserve our culture. So, I will never leave this job, I will bring this culture to the next generation. (Ethnic member 3, 53-year-old male)"

The head of village (ethnic member 4) also agreed that tourism has already gave a popularity to the community when compared to other indigenous groups in Malaysia. He also insisted that the treasures of the community should be preserved to make the culture sustainable.

> "Just as I mentioned, for now I want to collect treasures and artifacts of Mah Meri tribe. If there is no cooperation from authorities, the treasures will disappear, or probably lost. Not

treasures only, ceremonies and rituals probably are already gone and can't be recognized already. So for me this one has not been satisfied. I want the relevant authorities to give good cooperation. Just like the findings of the tribe, Jah Hut, Semelai, Temiar which is not popularized yet. So it is with Mah Meri particularly the tribe at we Kg. Sg. Bumbon Already have gained attention because of tourism. In the meantime even though I have already achieved popularity at my village, it has not satisfied me yet." (Ethnic member 4, 62-year-old-male, head of the village)

Apart from the effort to collect and preserve the treasures of the community, another ethnic member mentioned that the primary school located in the village is already encouraging their students to learn Mah Meri dance.

"Now, in my opinion, pioneers, youngsters are starting the cultural activities from school itself. At the school, even here there is a dance group. So, there's also exposure given." (Ethnic member 5, 35-year-old male)

Thus, the community strongly believes that tourism has directly polished the image of the community, and also encouraged them to preserve their culture for the next generation. Although they are empowered to do whatever they want, some of the respondents felt the influence of the middleman (tour agents) does not allow them to freely conduct business with tourists.

"I can control my business. No problem. But for the dance, we have to listen to the tour agent. Whatever we get, we share. I can't ask for more. If he (tour agent) never brings tourists here, who else will bring? We are just following his order and prepare the performance." (Ethnic member 2, 44-year-old female).

"Now here we use middlemen to sell but we do not want to use the middlemen, so if there is no use of middlemen, some things we sell ourselves and we get the full profit. We do not have objection if people (outsiders) want to sell for us, but we do not have full control on what to carve or weave. We must do whatever the middleman asks us to do with a certain time period given to complete or job. In terms of control, the middleman will sometimes come and monitor his order but the control is not so tight. If the goods are not ordered or not booked, we are free to sell. However, we accept the control, because we have to tolerate. I think there is a win-win situation." (Ethnic member 6, 52-year-old male).

Another ethnic member stated strongly that the arrival of middlemen is a big helping hand for them to sell their product to outsiders.

"Gerai OA (online shop) is very good. They come and take our products. They do not take a single cent from the sales. For instance, if I want RM5 for this bookmark, they will sell it for RM5 in the internet and give me RM5. They do not take any money; I am very sure. They just want to help us. They will come every month and take my bookmarks and other products. They will sell at KL and pay us." (Ethnic member 7, 35-year-old female).

Thus, it can be said the issue of empowerment is determined by the level of control of the middleman who brings in the tourists and sells the Mah Meri's products to outsiders. Some of the respondents are given full authority to determine the type, size and price of the product compared to others who are obliged to deliver the outcome according to the order and preferences of the outsiders.

5. Conclusions

The findings of this study support the general theoretical narrative relating to the scope of ethnic group development and tourism development. In this study, participation, cultural sustainability and empowerment appear to be significant determinants of sustainable indigenous tourism practice.

Even though Murphy's ecological model does not mention the term "sustainability", the description of the theory clearly shows that it emphasizes sustainable development. According to Murphy, apart from economic and business aspects aiming only at financial profits, social and environmental impacts must be taken into consideration. Tourism development or ethnic group development that operates without controlling the social and environmental impacts will only result in negative repercussions such as destruction and pollution of nature and deterioration of local ethnic group values. Thus, the finding state that cultural resources as one of the most important factors to drive sustainable indigenous tourism, supporting Murphy's theory. However, the outcome contradicts Murphy's theory because scarce natural resources are easily replaced with alternative resources to sustain tourism related activities.

The results of the study also do not contradict social exchange theory, which says that the people who benefit from tourism, support tourism [53,56]. The indigenous people involved directly in tourism tended to have positive perceptions of indigenous tourism, because they directly receive economic benefits. Apart from that, the other villagers who are not directly involved in tourism are not averse to tourism. Although they barely get any income from tourism, they are still in favour of tourism mainly for its impact on cultural and environmental sustainability [65]. This result is contrary to arguments by many authors whose emphasis have been on economic benefits within the scope of social exchange theory. However, Perdue et al. [66] supported similar conclusions in line with the present study that supports social exchange theory emphasizing on socio-cultural and environmental benefits. According to scholars, although the participants in tourism arguably are more positive of tourism compared to the non-participants, non-participants will not reject tourism in their area because they still receive other benefits from it. Thus, although this study supports social exchange theory, the outcomes show that the non-participants of tourism in Mah Meri Cultural Village are also supportive of tourism but their support is not as high as that of the direct participants (weavers, woodcarvers and dancers).

The findings also demonstrate that the ethnic group is not practising individual development but supports people involved in tourism for the betterment of the whole village. Gomes [67] mentioned that equality is an important value owned by the Orang Asli ethnic group whereby the power and resources are shared among the members of the ethnic group and not dominated by an individual. This argument is an important contribution to social exchange theory which is heavily focused on the economic benefit of community development and neglects the socio-cultural and environmental perspectives.

The main limitation of this study is the small sample size of the Mah Meri ethnic group. Future researchers could consider obtaining a wider sample by selecting various indigenous communities of distinct cross-cultural backgrounds to generalise the findings. In this study, the perceptions of the single community are obtained. It is suggested that future studies could consider including various stakeholders' perceptions to derive a more holistic sustainability barometer.

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References

1.　Tyrrell, T.J.; Johnston, R.J. The economic impacts of tourism: A special issue. *J. Travel Res.* **2006**, *45*, 3–7. [CrossRef]
2.　Swarbrooke, J. *Sustainable Tourism Management*; CABI: Wallingford, UK, 1999.
3.　Weaver, D.; Oppermann, M. *Tourism Management*, 5th ed.; John Wiley and Sons: Hoboken, NJ, USA, 2000; pp. 34–56.

4. Asmar, S. *Culture of Sustainability: Measuring Sustainable Lifestyles at the College Level (Environmental Ethics Fellowship Paper)*; Santa Clara University: Santa Clara, CA, USA, 2009.

5. Pezzey, J.; Toman, M.A. *The Economics of Sustainability: A Review of Journal Articles*; Resources for the Future: Washington, DC, USA, 2002.

6. Nixon, D. I Can't Put a Smiley Face On: Working-Class Masculinity, Emotional Labour and Service Work in the 'New Economy'. *Gender Work Organ.* **2009**, *16*, 300–322. [CrossRef]

7. Woodcraft, S.; Hackett, T.; Caistor-Arendar, L. *Design for Social Sustainability: A Framework for Creating Thriving New Communities*; Future Communities/The Young Foundation: London, UK, 2011.

8. Theobald, W.F. *Global Tourism*, 3rd ed.; Butterworth-Heinemann/Elsevier: New York, NY, USA, 2005.

9. Swarbrooke, J.; Page, S.J. *Development and Management of Visitor Attractions*; Butterworth-Heineman: Oxford, UK, 2012.

10. The World Conservation Union (IUCN). *IUCN Guidelines for the Prevention of Biodiversity Loss Caused by Alien Invasive Species*; Species Survival Commission, Invasive Species Specialist Group, IUCN: Geneva, Switzerland, 2000.

11. Padmini, D. Cultural Sustainability: Sustaining Traditional Architecture for Tourism in Malaysia-a Case Study of Bangsar, Bukit Bintang and Sunway Lagoon Resort. Ph.D. Thesis, Universiti Putra Malaysia, Selangor, Malaysia, 2004.

12. Dernoi, L.A. Farm Tourism in Europe. *Tour. Manag.* **1983**, *12*, 155–166. [CrossRef]

13. Chan, J.H.; Zhang, Y.; McDonald, T.; Qi, X. Entrepreneurship in an Indigenous Community: Sustainable Tourism and Economic Development in a Newly Inscribed UNESCO World Heritage Site. In *Indigenous People and Economic Development*; Iankova, K., Hassan, A., Eds.; Routledge: Oxford, UK, 2016; pp. 189–205.

14. Boyle, A. Research and Indigenous Tourism: Cultural Collision or Collaboration. In Proceedings of the 12th International Research Conference of CAUTHE, Fremantle, WA, USA, 6–9 February 2002.

15. Butler, R.; Hinch, T. *Tourism and Indigenous People: Issues and Implications*, 2nd ed.; Butterworth-Heinemann: Ann Arbor, MI, USA, 2007. (First published: 1996).

16. Holder, A.; Ruhanen, L. Identifying the relative importance of culture in Indigenous tourism experiences: Ethnographic evidence from Australia. *Tour. Recreat. Res.* **2017**, *42*, 1–11. [CrossRef]

17. Kunasekaran, P.; Gill, S.S.; Talib, A.T. Community Resources as the Indigenous Tourism Product of the Mah Meri People in Malaysia. *J. Sustain. Dev.* **2015**, *8*, 158. [CrossRef]

18. Cohen, E. Authenticity and commoditization in tourism. *Ann. Tour. Res.* **1988**, *15*, 371–386. [CrossRef]

19. King, V.T. Tourism and Culture in Malaysia. In *Tourism in Southeast Asia*; Hitchcock, M., King, V.T., Parnwell, M.J.G., Eds.; Routledge: London, UK, 1993; pp. 96–116.

20. Liu, O.P. *Packaging Myths for Tourism: The Rungus of Kudat*; Universiti Kebangsaan Malaysia Press: Bangi, Malaysia, 2008.

21. Besermenji, S.; Milić, N.; Mulec, I. Indians culture in the tourism of Ontario. *Zb. Rad. Geogr. Inst. Jovan Cvijić Sanu* **2011**, *61*, 119–136. [CrossRef]

22. O'Gorman, K.D.; Thompson, K. Tourism and culture in Mongolia: The case of Ulaanbaatar Naadam. In *Tourism and Indigenous People: Issues and implications*, 2nd ed.; Butterworth-Heinemann: Ann Arbor, MI, USA, 2007; pp. 161–175, 193–210.

23. Thompson, C. Host Produced Rural Tourism. *Ann. Tour. Res.* **2004**, *31*, 580–600. [CrossRef]

24. UNWTO (2004). Sustainable Tourism Development. Available online: http://sdt.unwto.org/en (accessed on 20 September 2012).

25. Williams, L.K.; Gonzalez, V.V. Indigeneity, sovereignty, sustainability and cultural tourism: Hosts and hostages at Iolani Palace, Hawai'i. *J. Sustain. Tour.* **2017**, *25*, 668–683. [CrossRef]

26. Homans, G. *Social Behavior*; Harcourt, Brace and World: New York, NY, USA, 1961.

27. Zafirovski, M. Social Exchange Theory under Scrutiny: A Positive Critique of its Economic-Behaviorist Formulations. *J. Soc.* **2005**. Available online: http://www.sociology.org/content/2005/tier2/SETheory.pdf (accessed on 2 March 2011).

28. Blau, P. *Structural Contexts of Opportunities*; University of Chicago Press: Chicago, IL, USA, 1994.

29. Beeton, S. *Community Development through Tourism*; Landlinks Press: Collingwood, VIC, Australia, 2006.

30. Ng, S.I.; Chia, K.W.; Ho, J.A.; Ramachandran, S. Seeking tourism sustainability–A case study of Tioman Island, Malaysia. *Tour. Manag.* **2017**, *58*, 101–107. [CrossRef]

31. Ho, J.A.; Chia, K.W.; Ng, S.I.; Ramachandran, S. Problems and Stakeholder Responsibilities in Island Tourism: The Case of Tioman Island in Malaysia. *J. Hosp. Tour. Res.* **2017**, *41*, 445–474. [CrossRef]

32. Asnarulkhadi, A.S. *Pengenalan Pembangunan Komuniti. Serdang*; Selaseh Press: Serdang, Malaysia, 2003.

33. Nowak, S. Marriage and Household: Btsisi' Response to a Changing World. Ph.D. Thesis, State University of New York, Buffalo, NY, USA, 1987.

34. Karim, W.J.B. With moyang melur in Carey Island. In *Gendered Fields: Women, Men, and Ethnography*; Routledge: London, UK, 2013; p. 78.

35. Suet Ching, C. Mah Meri on Stage: Negotiating National Policies, Tourism and Modernization in Kampung Sungai Bumbun, Carey Island. Ph.D. Thesis, University of Hawai, Honolulu, HI, USA, 2010.

36. Arnstein, S.R. A Ladder of Citizen Participation. *J. Am. Inst. Plan.* **1969**, *35*, 216–224. [CrossRef]

37. Zimmerman, B.J. Self-efficacy and educational development. *Self-Effic. Chang. Soc.* **1995**, 202–231. [CrossRef]

38. Aref, F.; Ma'rof, R. Ethnic group capacity building for tourism development. *J. Hum. Ecol.* **2009**, *27*, 21–25.

39. Choi, H.C.; Sirakaya, E. Sustainability indicators for managing community tourism. *Tour. Manag.* **2006**, *27*, 1274–1289. [CrossRef]

40. Tsaur, S.H.; Lin, Y.C.; Lin, J.H. Evaluating ecotourism sustainability from the integrated perspective of resource, ethnic group and tourism. *Tour. Manag.* **2006**, *27*, 640–653. [CrossRef]

41. Prescott-Allen, R. *Barometer of Sustainability: Measuring and Communicating Wellbeing and Sustainable Development*; IUCN, International Union for Conservation of Nature and Natural Resources: Fontainebleau, France, 1997.

42. Opermann, M.; Page, S.J.; Getz, D. *The Business of Rural Tourism: International Perspectives*; International Thomson Business Press: London, UK, 1997.

43. Baum, T. Human resources in tourism: Still waiting for change. *Tour. Manag.* **2007**, *28*, 1383–1399. [CrossRef]

44. Wearing, S.; Harris, M. An approach to training for indigenous ecotourism development. *World Leis. Recreat.* **1999**, *41*, 9–17. [CrossRef]

45. Kunasekaran, P.; Gill, S.S.; Talib, A.T.; Redzuan, M.R. Culture as an indigenous tourism product of Mah Meri Community in Malaysia. *Life Sci. J.* **2013**, *10*, 1600–1604.

46. Berno, T. Doing it the 'Pacific Way': Indigenous education and training in the South Pacific. In *Tourism and Indigenous Peoples*; Butterworth-Heinemann: Oxford, UK, 2007; pp. 28–39.

47. Baum, T.; Cheung, C.; Kong, H.; Kralj, A.; Mooney, S.; Thi Thanh, N.N.; Ramachandran, S.; Ružic Siow, M.L. Sustainability and the tourism and hospitality workforce: A thematic analysis. *Sustainability* **2016**, *8*, 809. [CrossRef]

48. Scheyvens, R. Backpacker tourism and third world development. *Ann. Tour. Res.* **2002**, *29*, 144–164. [CrossRef]

49. Nair, M.B.; Ramachandran, S.; Shuib, A.; Syamsul, H.M.A.; Nair, V. Multi-criteria decision making approach for responsible tourism management. *Malays. For.* **2012**, *75*, 135–146.

50. Goodwin, H. Local ethnic group involvement in tourism around national parks: Opportunities and constraints. *Curr. Issues Tour.* **2002**, *5*, 338–360. [CrossRef]

51. World Tourism Organization. *UNWTO Technical Manual: Collection of Tourism Expenditure Statistics*; World Tourism Organization: Madrid, Spain, 1995.

52. Shazali, N.; Chew, T.H.; Shamsir, M.S.; Tingga, R.C.T.; Mohd-Ridwan, A.R.; Khan, F.A.A. Assessing Bat Roosts Using the LiDAR System at Wind Cave Nature Reserve in Sarawak, Malaysian Borneo. *Acta Chiropterol.* **2017**, *19*, 199–210. [CrossRef]

53. Oswald, F.; Wahl, H.W.; Schilling, O.; Nygren, C.; Fänge, A.; Sixsmith, A.; Iwarsson, S. Relationships between housing and healthy aging in very old age. *Gerontologist* **2007**, *47*, 96–107. [CrossRef] [PubMed]

54. Siow, M.L.; Ramachandran, S.; Shuib, A.; Mohammad Afandi, S.H. Adapting evidence-based intervention in rural tourism policies: Pragmatic benchmarking considerations for tourism business operations in Semporna, Sabah, Malaysia. *Worldw. Hosp. Tour. Themes* **2015**, *7*, 473–485. [CrossRef]

55. Ibanez, J.; Austin, B.; Garnett, S.T. Indigenous People's Perception in the Philippines. In *Indigenous People and Economic Development: An International Perspective*; Iankova, K., Hassan, A., L'Abbe, R., Eds.; Routledge: London, UK, 2016.

56. Colton, J.; Harris, S. Indigenous ecotourism's role in ethnic group development: The case of the Lennox Island First Nation. In *Tourism and Indigenous People: Issues and implications*, 2nd ed.; Butterworth-Heinemann: Ann Arbor, MI, USA, 2007; pp. 220–233.

57. Hunt, J. Capacity Development in the International Development Context: Implications for Indigenous Australia. 2005. Available online: http://www.voced.edu.au/content/ngv23934 (accessed on 23 April 2014).

58. Carr, A. Maori nature tourism businesses: Connecting with the land. In *Tourism and Indigenous Peoples*, 2nd ed.; Butterworth-Heinemann: Ann Arbor, MI, USA, 2007; pp. 113–127.

59. Soutar, G.N.; McLeod, P.B. Residents' perceptions on impact of the America's Cup. *Ann. Tour. Res.* **1993**, *20*, 571–582. [CrossRef]

60. Pérez, E.A.; Nadal, J.R. Host ethnic group perceptions a cluster analysis. *Ann. Tour. Res.* **2005**, *32*, 925–941. [CrossRef]

61. Brown, K.G.; Cave, J. Island tourism: Marketing culture and heritage–editorial introduction to the special issue. *Int. J. Cult. Tour. Hosp. Res.* **2010**, *4*, 87–95. [CrossRef]

62. Siow, M.L.; Ramachandran, S.; Shuib, A.; Mohammad Afandi, S.H. Malaysia's National Ecotourism Plan from a semiotic perspective. *Malays. For.* **2014**, *77*, 73–86.

63. Andereck, L.; Valentine, M.; Knopf, C.; Vogt, A. Residents' Perception on Ethnic group Tourism Impacts. *Ann. Tour. Res.* **2005**, *32*, 267–282. [CrossRef]

64. Mason, P.; Cheyne, J. Residents' attitudes to proposed tourism development. *Ann. Tour. Res.* **2000**, *27*, 391–411. [CrossRef]

65. Prabhakaran, S.; Nair, V.; Ramachandran, S. Marine waste management indicators in a tourism environment: Exploring possibilities for Semporna District, Sabah. *Worldw. Hosp. Tour. Themes* **2013**, *5*, 365–376. [CrossRef]

66. Perdue, R.R.; Long, P.T.; Allen, L. Rural Resident Tourism Perception and Attitudes. *Ann. Tour. Res.* **1987**, *14*, 420–429. [CrossRef]

67. Gomes, A. Alter-native Development: Indigenous Forms of Social Ecology. *Third World Q.* **2012**, *33*, 1059–1073. [CrossRef]