



**JOURNAL OF TOURISM,
HOSPITALITY AND
ENVIRONMENT MANAGEMENT
(JTthem)**
www.jthem.com



SOCIAL NETWORK ANALYSIS OF TADOM HILL, BANTING, SELANGOR AND THE IMPLICATIONS UPON IT'S MANAGEMENT

Siti Mariam Mellisa Abdullah^{1*}, Nurhidayah Zakaria², Fatin Farazh Ya'acob³, Mohd Shahwahid Haji Othman⁴

- ¹ Centre of Foundation Studies, Universiti Teknologi MARA, Malaysia
Email: mariammellisa@uitm.edu.my
- ² Centre of Foundation Studies, Universiti Teknologi MARA, Malaysia
Email: nurhidayahz@uitm.edu.my
- ³ Faculty of Business and Management, Universiti Teknologi MARA, Malaysia
Email: fatinfarazh@uitm.edu.my
- ⁴ MSR Inspire Professional Services
Email: mohdshahwahid@gmail.com.my
- * Corresponding Author

Article Info:

Article history:

Received date: 12.03.2023
Revised date: 20.04.2023
Accepted date: 02.05.2023
Published date: 06.06.2023

To cite this document:

Abdullah, S. M. M., Zakaria, N., Ya'acob, F. F., & Othman, M. S. (2023). Social Network Analysis of Tadam Hill, Banting, Selangor and The Implications Upon It's Management. *Journal of Tourism Hospitality and Environment Management*, 8 (32), 01-19.

DOI: 10.35631/JTthem.832001.

This work is licensed under [CC BY 4.0](https://creativecommons.org/licenses/by/4.0/)



Abstract:

Purpose - Community-based management practice is set as an illustration of how local stakeholders participation many problems and dilemmas in connection with governing ecotourism could be better resolved. A case study of Tadam Hill (TH) in Banting, Selangor has been facing complaints from the local indigenous community concerning the governance of the resort. The aim of this study to identify the stakeholders, their roles in the social network of TH, characterize their relationships between them and establish the effects on governance issues at TH. Design- A survey was administrated to different groups of stakeholders who has connection with TH in order to characterize the relationships between them and establish their effects on governance issues at TH. Methodology - Social Network Analysis (SNA) method was used to identifies the key stakeholders and their roles in the social network of TH. Findings - The results gained from the SNA has provided greater thorough information of the top-down management approach at the resort. For a resort to be efficiently managed, effective involvement of the stakeholders is essential. Conclusion - It was concluded that the management of the ecotourism services at TH need the involvement of local stakeholders in the pursuit of greater co-management at the resort.

Keywords:

Ecotourism, Community-based management, Tadom Hill, Social Network Analysis, Stakeholders

Introduction

Ecotourism has been recognized as one of the fastest growing sectors of global tourism (Mckinney, 2016) which have directly contributed to the local economy. It can create revenues from business opportunities to local communities while enhancing their quality of life and in nurturing infrastructural improvement. To be simply said, ecotourism activities are nature-based, have minimal impact, cultivate environmental and cultural awareness and respect, generate incomes and empowerment to local people and raise sensitivities to the political, environmental and social climate of the host countries (TIES, 2015). However, it is not always transparent whose well-beings have benefited from ecotourism as few reliable monitoring programs have been implemented (Buckley 2009, Moscardo, 2008). According to the Prime Minister Department (2015), about 10% of the total tourist arrivals into Malaysia are related to ecotourism. This implies that local communities may have a share, albeit small of the opportunities from the growth of the ecotourism. Nonetheless, this presumption is yet to be investigated.

The definition of ecotourism is described as "responsible travel to natural areas that conserves the environment, sustains the well-being of the local community, and involves interpretation and education" (The International Ecotourism Society (TIES), 2015, para.1). The inclusion of education is meant to be a value that benefits both the visitors as well as the service providers owing to the interaction created between them and with nature. According to TIES, ecotourism is centered largely on *uniting conservation, communities, and sustainable travel*. One of the issues raised in the discussion of this topic is the degree of participation and income sharing among local communities as occurred within the community of indigenous people, particularly in the execution of the services as ecotourism grows. This concern has been raised by Stone (2015) when he stated that there is a perception of limited restructuring of power and control among the interested and affected stakeholders. For example, some local communities feel that the power of decision making lies largely on the government side and they have little say in most matters. Hamzah and Mohamad (2012) concluded that local communities are still economically marginalized particularly in the Aboriginal region due to the lack of commercial viability in the Community-Based Tourism (CBT) projects developed for them.

Timothy (1999) also asserted that the economic benefit and education obtained by the local community from their involvement may only existed in theory but not in practice. Furthermore, another problem is that, more often than not, the local and other stakeholders' participation in the decision making are considered unimportant during the planning stage. Many researchers have already discussed the benefit of local community involvement in ecotourism development in terms of the opportunities and capability enhancement (Bodin and Crona 2009; Mohd-Ihsan et al. 2010; Mohd-Shahwahid,2012; Moscardo and Murphy,2014). The ultimate intent is to create an ecotourism using the bottom-up strategy in order to avoid manipulation by the local elites (Mohd-Shahwahid et al., 2016). Therefore, this paper was to identify the stakeholders, their roles in the social network of TH, characterize their relationships between them and establish the effects on governance issues at TH.



Figure 1. A Picture Showing the Location Where the Case Study is Undertaken.

This study is at Tadam Hill (TH) a tourism site that claimed to provide ecotourism services in Malaysia (Truly Asia, 2018). TH boasts 40 acres landscape of limestone hills, turquoise spring water lakes and rainforest trees. Located within this setting is Tadam Hill Resort (THR) that provides accommodation with ecotourism attraction. It is located 12 minutes away from Kuala Lumpur International Airport, and takes 45 minutes to arrive from Kuala Lumpur city. This resort has two types of accommodation - Tadam Bamboo Camps consist of dorms and campsites and Tadam Bamboo Suites which are premium chalets. Almost all of the building structures at the resort are built with bamboo – which is one of the most sustainable building material.

THR provides a number of recreational features that mainly utilize natural resources such as bamboo diving platforms, handcrafted floating lounge chairs, and swings at the lake. Other facilities also make use of the same material including the bamboo hall, bamboo treehouse, barbeque area with outdoor furniture made of bamboo, TH cafe, praying hall, bamboo showers and toilets. All these structure is aimed to provide an eco-friendly environment. Although the hall is mainly built using bamboo, it is a multi-purpose facility that can cater events for up to 100 people. Given such landscape and facilities at THR, it is clear that the assembling of this resort is intended to provide escapade for their visitors.

Despite these features, the owner and the management of THR are not local citizens. Hence, they faced difficulties in the initial stage of obtaining legal entity proclamation from the government authority and acceptance from local communities. Thus, in response to this situation, the District Land Office who is in charge of the registration of land ownership and the Department of Indigenous People Development (JAKOA) have called for a stop-work order to halt the tourists from visiting the resort until the land issue was resolved and officially gazetted. Only after this event, was the application process of a tourism license to develop the area permitted. However, a conflict with the local Aboriginal people occurred for the failure to firstly meet and discuss the matter with the village's head, also known as the local Aboriginal

chieftain. Such predicament took place due to the lack of effort in understanding the local Aboriginal custom and norm from the owner and management's party, worsen with poor communication skills. As a response to that, the local Aboriginal community demanded a sum of monetary contributions to support the community's welfare and cultural activities. Nonetheless, thanks to the owner and management's willingness to understand and comply with the Aboriginal community's requests and to comply with regulations exerted by the government regarding the land ownership and the licensing of tourism services, have amicably resolved the issues. The owner and management also took a step further by opening more job opportunities to locals as a part of its corporate social responsibility (CSR). There are four villages under the charge of the village head namely Kampung Bukit Tadam, Kampung Mukus Tua, Kampung Paya Rumpit and Kampung Sungai Kelembau. Under this CSR project, the owner and management have managed to include meaningful local community participation whereby proactive local Malays and aborigines were given the trusts and promotions to hold essential positions such as site supervisor, operations supervisor, and senior hotel reservation officer. Up until now, around 90% of the staffs employed in the resort are made up of the aborigines and locals living in Kampung Bukit Tadam. In addition to that, live performances of cultural dances are often performed by the local aborigines at Tadam Groove platform located by the turquoise lake. With such features above, it was observed that co-management can apparently being practiced at THR and management with legal formal administrative set-ups involving the local communities in essential workforce positions is possible to be done. With the qualities such as ecotourism site utilizing local natural materials as construction materials, compliance to government's regulations, active participation of local in the operations of the resort leisure and accommodation, it is not bizarre for tourist's demand to rise dramatically.

Table 1 shows the number of visitors that visited Malaysia from 2006 to 2020. The diagram clearly shows that the highest tourist arrivals was in the year 2014. As a leading country in receiving inbound tourist within ASEAN region, Malaysia is prone to be the first choice of destination for international tourist (Sufahani et al., 2016), that will then lead to an increment of international tourist to Malaysia. This is also indicative of the importance of ecotourism, as 10% of these visitors are seeking nature and eco-based attractions as mentioned by the Prime Minister's Department report.

Table 1
Tourist Arrival and Receipt in Malaysia 2006-2020

Year	Arrivals (Million)	Receipt (RM) (Billion)
2006	17.55	36.3
2007	20.97	53.4
2008	22.05	49.6
2009	23.65	53.4
2010	24.58	56.5
2011	24.71	58.3
2012	25.03	60.6
2013	25.72	65.4
2014	27.44	72

2015	25.72	69.1
2016	26.76	82.1
2017	25.95	82.1
2018	25.83	84.1
2019	26.10	86.1
2020	4.33	12.7

Source: Tourism Malaysia (2020)

Based on the observation made, it is claimed that co-management is being practiced at THR and it is managed with legal formal administrative set-ups that also involves the local communities in important workforce positions. Thus, a specific investigation is needed to verify the above claims. Once being affirmatively proven, the results obtained can be used as the benchmark for other ecotourism sites as guidance. Such investigation can then determine the effectiveness of THR's administration and the level of inclusivity of local community in decision making and management of the ecotourism site. This calls for an investigation at the ecosystem level involving the whole social network. Hence, it is necessary for the identification of the important stakeholders involved, their interests and their relationships/interactions. There are few researchers from the past had found an effective method in overcoming these issues and dilemmas in governing ecotourism which is called as Social Network Analysis (SNA) (Folke et al.,2005, Ohtsuki et al.,2006). SNA is the process of investigating social structures such as handling ecotourism site through its network analysis. In a network, nodes represent the individual stakeholders which involved in the ecotourism site management. Other measurement such as ties or edges are the specific relationships or interactions that connect these nodes. Scholt and Wang (2006) has been highlighting the fact that SNA can be used by existing formal institutions in encouraging stakeholders to deal with environmental law and enforcement. The objective of this paper is to identify the tourism ecosystem, in particular the relevant stakeholders, who play significant roles at ecotourism sites and to find out their interest and the influence they provide within the network in the provision of quality ecotourism services.

Literature Review

In recent years, there is an increase of attention given to the importance of networking in tourism and hospitality (Augustyn and Knowles, 2000; Lynch, 2000; Medina-Munoz and Garcia-Falcon, 2000; Telfer, 2001; Tinsley and Lynch, 2001; Pavlovich, 2003). The relationship or ties in tourism is very important in order to understand its activity: such as flow of tourism, movement between the destination and the itinerary, business relationship such as partnership and franchise, relation of stakeholder in a destination, informal relation between different stakeholders, customer and tourist relationship and others. Furthermore, many previous studies employed network analysis in their observations particularly in the research on tourism business collaboration (Telfer, 2001; Tinsley and Lynch, 2001), destination marketing strategy (Morrison, 1998), and tourism policy development (Pforr, 2002, Timur, 2005).

According to Kilduff and Brass (2010), there are four main ideas that lead social network theory studies namely the relationship between actor, embeddedness, structural patterning, and social utility of network connections. In the initial stage, SNA is aimed at the relationships that connect or separate a set of actors or stakeholders (Tichy, Tushman, and Fombrun, 1979). Moreno (1934) debated that a person's attitude is determined by the location in a social

network. Other researchers have conducted experimental studies of actors in their own social context (Heider, 1946; Lewin, 1936). Durkheim (1951) argued that social abnormalities were not caused by individual intent. This is because human society functions like a biological system, composed of related components. Comte (1854) had then discovered “social physics” which he later called as sociology. The second main assumption of social network theory (SNT) is the embeddedness, or the tendency to join the network and create renewed and extended relationships over time (Baker and Faulkner, 2002; Granovetter, 1985). These relationships are termed ties in SNT. There are two ties “Arm’s length” and “embedded” ties. The earlier ties are not as powerful as the latter ties in terms of trust, information sharing and problem-solving capabilities (Uzzi, 1996). The third main idea of SNT is that there are several long-lasting patterns such as clustering, connectivity, and centralization (Wellman, 1988). SNA at the same time examines the whole and the social networking parts (Moliterno and Mahony, 2011; Wellman, 1988). The fourth main idea behind the theory is the social utility of networking or social networks that actors develop to give opportunities and constraints for those outcomes that are important to the actors. Burt (1992, 2000) studied the ideas of structure holes. Structural holes exist between two people in the individual network if both share a tie and no connection with each other. This approach indicates the unique relationships that exist with other individuals and firms. This can allow access to information and resources, which may result in greater opportunities to control.

Social networking theories highlight the power of indirect relationships. This theory emphasizes that the network is more than just two interacting people. Travers and Milgram (1969) have asked volunteers in Nebraska to send letters to a stranger in Boston, who have a better opportunity than they did to know the person. The results showed that it took around six intermediaries to reach the target audience, which then resulted in this situation to be known as the "six degrees of separation." In a small world, networks are highly locally clustered, has a short passage among members, which can increase efficiency in performance, such as collaboration and creativity (Feld, 1981). However, performance would increase in a small-network up to a level beyond which the positive effects tend to turn around (Uzzi and Spiro, 2005).

Few researchers had also highlighted the importance of studying networks in relation to destination, collaborative marketing, geography, and sustainable tourism (Shih, 2006; Wang and Xiang, 2007; Baggio et al., 2010; Schaffer and Lawley, 2012; Lee et al., 2013; Albrecht, 2013). The term ‘collaboration’ can be explained as a joint decision-making process among the major stakeholders regarding a problem of domain and about the future of that domain (Gray, 1989). Collaboration includes exchanging information, altering activities, resource sharing and increasing one's capacity for mutual benefit and achieving the common goal (Himmelman, 1996). Hence, it is then inferred that the collaboration will benefit all the tourist product providers through joint marketing initiatives (Leslie and McAleenan, 1990; Morrison, 1998; Hwang et al., 2002), knowledge sharing (Telfer, 2001), new product development, promotion of the destination and contribution to destination development (Tinsley and Lynch, 2001).

Many of the different groups of articles sharing the analysis of tourist destinations and groups and also studying the ties between stakeholders. The term ‘stakeholder’ also covers those who are in different business from tourism sectors, non-business organizations, government agencies, and others. Pavlovich (2003) focused on the scope of stakeholder’s structure evolution at a destination while Schaffer and Lawley (2012) centered on stakeholder’s network

evolution. Baggio (2011), also addressed the simplification of the complexity, groups identification or modules on the network of links between actors while Baggio et al. (2010) adopted a different approach, choosing to utilize statistical models in the same context, but integrated virtual networks analysis to emphasize the dynamic component of the destinations. Other examples of studies on the research of the network of destination such as Lee et al., (2013) also explained the importance of the role of their positions in the network structure for rural areas. Meanwhile, the rest of literatures (Hwang et al., 2006; Shih, 2006; Leung et al., 2012) were concerned with patterns in the sequences and flows of tourist trips on airline routes for tourism industry.

The strength of using SNA is the ability to investigate the relationship between actors systematically and quantitatively (Yamaki, 2017). It is likely to find key stakeholders who are deeply involved in governance based on the central actors using SNA. In addition, the SNA allows to search peripheral actors and groups who have weak influence in the networks, even though they are involved in the decision-making. Several literature have applied SNA to analyze governance network in natural resource (Prell et al., 2009; Lienert et al., 2013; Paletto et al., 2015, 2016) and ecotourism (Mohd Shahwahid et al., 2016). However, there is a need to conduct research on the effect of natural resource and ecotourism governance especially in Malaysia. Therefore, there is a gap in identifying the key stakeholders within the governance network of managing ecotourism. This study attempts to investigate on this matter by using TH as a case study to understand the interests and roles of relevant stakeholders particularly local communities and to assess how they could be more effective in managing the ecotourism site (Mohd Shahwahid et al., 2016).

Research Methodology

Measurement

In the last decade, there has been an increase in the research on social networks especially in social sciences department following the trends in physics, epidemiology, and biology (Borgatti and Halgin, 2011). In the study of tourism, social network has been applied to find solutions to overcome the problems and dilemmas faced in governing tourism sites (Folke et al., 2005, Ohtsuki et al., 2006 and Mohd Shahwahid et al., 2016). SNA is a process of investigating the social structure within a network by identifying actors having an influence on each other and the manner of their relationship. A network for a tourism service comprises of personages that represent the individual stakeholders involved in the management of the tourism site. Hence, from here onwards, the term stakeholders will be used. The term 'ties' in this context indicates specific relationships or interactions that connect these stakeholders. Stakeholders with strong ties are more likely to influence one another, and thus, the creation of stronger bonds among the diverse stakeholders can further enhance mutual learning and the sharing of resources and advice (Crona and Bodin, 2006; Newman and Dale 2004, 2007). The SNA can also be employed by the existing formal institutions to encourage stakeholders to deal with environmental law and enforcement (Scholt and Wang, 2006).

SNA focuses on the relationship between stakeholders and their implications through the use of the concept of "centrality" (Bavelas, 1950, Leavitt, 1951 and Freeman, 1977). Centrality carries the meaning of being at the most central point in a social network, that brings with it power and is most advantageous (Bonacich, 1987). It is also important to mention that power in the context of stakeholders or nodes is their influence on other members of the network.

Additionally, there are many other concepts in SNT derived from graph theory. There are two types of investigations invented that utilized SNA on the research of natural resource management (Bodin and Crona, 2009) and this paper exploited both investigative types. The first investigation focused on the structural characteristics of the network in ecotourism site by observing the different pattern of ties. It concentrated on understanding the pattern of relations between stakeholders at the site. In addition, it also paid attention on the ties of information flow that show the way stakeholders inside the network share information with each other regarding activities that occur within the tourism site. Next, the second investigation computed the range of network metrics or measurements. There were two forms of network metric analysis in this study. The first type was at the ego network analysis while the second type investigated the overall network level. The node level analysis belongs to the earlier and it observed the characteristics of the individual stakeholder in the way he or she behaves within the network. Meanwhile, network level analysis belongs to the latter evaluated the overall network ties as observed from outside the network (Borgatti and Li, 2009).

There are examples of basic network metric and definition shown in this paper (see Table 2). The first was the total number of ties established between the nodes in the network. The second network metric computed was the density that reports the available number of ties as proportional to the total possible number that the network could achieve. The highest level of density attained was 1, which implied that the network was fully connected with every node having ties or was connected to all other nodes in the network. Hence, the higher density obtained from the study suggested that the network was very cohesive. The third network metric calculated was geodesic distance that revealed how many stakeholders have to be informed before the information regarding tourism activity at the site could be completely passed around the network. Geodesic distance gauged the level and speed of information during the process of sharing in the network. The shorter the distance the faster the information could be relayed. The fourth network metric was the degree centrality that exhibited the number of ties a node has with other nodes. The high degree centrality positioned it to be more central and visible within the network (Freeman, 1978). The node or stakeholder with a higher degree centrality could also enacts changes and decides necessary resolves in order to improve the network. The fifth network metric was the betweenness centrality in which the frequency of a node laying on the shortest path between all combinations of pairs of other nodes was measured (Kim et al., 2011). This measurement focused on how other nodes or stakeholders were dependent on it to reach out or contact with other nodes inside the network. This node would have an intermediary role inside the network, with other nodes relying on it. This also made the node or stakeholder central in the network. These network metrics were used to investigate how tourism governance at the tourism site was affected. A typical social network structure and the formula to compute the above network metrics are summarized in Table 2.

Table 2
Social Network Analysis Metrics Definition and Formula

Measurement	Definition
Nodes	A social network involves of a set of nodes which also refers as actors or vertices in graph theory. Aside that, the nodes usually represent actors, individuals, groups, communities, organization and even governments. These nodes were connected through some type of relations, which also called <i>ties or edges</i> .
Density	Proportion of network that is connected; measured by the sum of ties in the network as a proportion of the total possible ties in the network. If the density is high there are considerable interactions among different members. A high value of density could arise because a single actor has many ties. A lower value of density has fewer links between actors.
Geodesic Distance	Proportion of the number of nodes that have to be connected for information on the active in the network to be circulated. A lower number of geodesics indicates the information move faster.
Degree Centrality	The simplest measure of node's connectivity within a network. This measure is useful to recognize important nodes, as it quickly shows the nodes with the highest volume of direct connections to other nodes.
Betweenness Centrality	Frequency with which a node falls in between pairs of other nodes on their geodesic distance (path of shortest distance between any two nodes). A high score could indicate an important node connecting disparate clusters, or just that a node is on the periphery of several clusters.

Source: Social Network Analysis Handbook, 2005

Due to the exploratory nature of this study, Social Networks Analysis (SNA) using a case study approach was carried out to determine the way the interests of these stakeholders had affected the governance of the ecotourism site. There were several categories of classifying stakeholders or nodes in the network depending on their functions, for examples, tourist activity providers, material suppliers, local community workers, village head, owner/management, government agencies, tourists, and non-governmental organizations (NGOs). In this study, the stakeholders that are directly involved and their inter-relationships would form the nodes and ties in the network respectively. Other stakeholders that were indirectly involved or affected by the implemented tourism activities, policy or regulation, but did not participate directly in the decision-making process were also included in this study.

However, the recruitment of research participants can be problematic when the research only focuses on specific individuals, groups or experiences which are not formally listed at the study site (Browne, 2005). In solving this problem, snowball sampling method has been commonly employed in social sciences researches to study sensitive topics, rare traits, personal networks, and social relationships (Kaplan, Korf, and Sterk, 1987). Therefore, the snowball technique was used to identify respondents within a stakeholder category in this study.

In the execution of this method, one respondent would need to nominate at least one or more respondents that she/he thought has an important contribution/role towards TH. The process continued until there was no more new stakeholders to be chosen. When this happened, it indicated that the desired population targeted was covered and the network boundary aimed was reached. This also allowed respondents within the network to set their own boundaries. This method is deemed to be the most suitable sampling method as the study needed to capture

both formal and informal stakeholders inside the network, thus, reflecting the actual population better as compared to the utilization of informed experts (Sandström and Rova, 2010). The comprehensive interviewing process of nominating respondents also helped completed the mapping of social relations of the study site and the investigated network structure could then be produced. Nevertheless, it should be noted that this approach still had a weak point in a way that exclusion of the involved stakeholders from the rest of the respondents might occur. This is because recruiting, with certainty, all the stakeholders that had interests in TH was impossible to be done.

The data was collected through field survey using standardized questionnaire (Table 3). Before the data collection process started, the draft questionnaire was firstly pre-tested at the study site. Based on results of the pre-test, some minor corrections and adjustments were altered to the questionnaire. Since this study relied heavily on survey method and field observation, the insights and information could be gained from the detailed discussion with respondents that had various interests in the park. A team of two enumerators visited the study area to obtain this information from respondents. The enumerators were trained to acquaint them with the objectives of the study and the purpose of the survey before and during the fieldwork data collection. During the survey, each respondent could nominate up to a maximum of 10 other individuals to be interviewed who also harbor interests in TH. Thus, this ensured that the study was able to capture a wide array of interests and roles in the network. The survey concluded with a total of 40 surveyed respondents. The data and information from the survey were keyed in into a datasheet following the SNA data entry system.

Table 3
Social Network Analysis Survey Questions

No	Relation which shows the network potential for information sharing
1.	Who are the most known stakeholders engaged in the Tadom Hill Resort?
2.	How often you interact with these stakeholders? Daily, week, month/year)
3.	How close is your relationship with these stakeholders?
4.	Who are the most trusted stakeholders?

To analyse the network data obtained, UCINET and NetDraw software were utilized. The breakdown of the samples in declining order of composition are: Local Community Orang Asli (23.1%), Suppliers of Bamboo, Food and Other Materials (25.6%), Tourists (15.4%), Aboriginal People Development Department (7.7%), Owner of THR (5.1%), Senior Staff (5.1%), Executive Director and Partner (2.6%), Village Aboriginal Chief (2.6%), Village Development and Security Committee (2.6%), State Tourism Executive Committee (2.6%), Land District Office (2.6%), Malay Local Community Cafe Operator (2.6%), and Advertiser (2.6%).

Results and Discussion

A total of 13 roles were identified from among the samples surveyed (Table 4). The local community Orang Asli that made up the largest percentage of the respondents were also perceived to have strong interests in TH and therefore potentially more influential on the services provided by the THR.

Table 4
Highest Degree and Betweenness Centralities for Each Category of Stakeholders At THR, Banting

No.	Stakeholders	Degree Centrality		Betweenness Centrality	
		Metric	Rank	Metric	Rank
1	Executive Director and Partner [EDandP]	26	1	201.17	1
2	Owner of THR [O1,O2]	23	2	145.15	2
3	Senior Staff [SS]	23	3	67.06	3
4	Village Aboriginal Chief [VAC]	21	4	56.73	4
5	Village Development and Security Committee [JKK]	20	6	42.86	6
6	Village Indigenous Community [VIC1,.....VIC9]	15	7	0.00	10
7	Malay Local Community Café Operator [MLCCO]	9	8	108.00	7
8	Advertiser [ADV]	9	9	7.492	8
9	Tourists (Volunteer) [T1.....T6]	4	10	0.57	9
10	Aboriginal People Development Department [APDD]	6	11	0.00	10
11	Land District Office [LDO]	3	12	0.00	10
12	State Tourism Executive Committee [STEC]	2	13	0.00	10
13	Suppliers of bamboo, food and other materials [OTI,BS1....BS4,FS1.....FS5,S1, S2,.....S4]	1	14	0.00	10

The level of connectivity within a network could be observed from the density metric. The total number of ties established by all the nodes or stakeholders in the network at TH was 305 (Table 4). The density computed was 0.21 which implied that, on average, one node only has ties or relationships to 21% of all the nodes in the network (Table 4). With a maximum possible density of 1, this indicated that TH was not highly cohesive as a high proportion of the nodes was found to not have social relations to one another. Networks that have a high number of social ties have a stronger participation in the information flow of ecotourism activities and management of THR (Bodin and Crona, 2009). In conclusion, these results suggest that the co-management in TH could have been made more effective.

Table 5
Summary of Network Metrics for The Social Network Analysis At THR, in Banting

Network Index	Value
Number of respondents	39
Total number of edges	305
Mean network density	0.21
Mean geodesic distance	1.9
Mean degree of centrality	7.82
Mean betweenness centrality	21.92

The efficiency of information flow concerning the ecotourism services provided and appreciated could be inferred from the geodesic distance. This metric was portrayed in a betweenness centrality metric. The geodesic distance revealed that information flow in TH needed 1.9 nodes or stakeholders for information concerning tourism activity at TH to be well circulated (Table 5). This can be further explained with the slightly slow circulation of information at TH. To attain an efficient information and service network, the estimated geodesic distance has to approach 1 (Bodin and Crona, 2009). Thus, the information sharing needs to move faster and should be processed in a less troublesome manner in order to facilitate the co-management of the eco-tourism site to be successful and sustainable.

Table 4 shows the ranking of the highest degree and betweenness centralities obtained by each category of stakeholder at TH while Figure 2 maps out the interconnectivity between the stakeholders. Categories for stakeholder are distinguished by colours. In the diagram, the stakeholders with high betweenness centrality scores which also have greater connectivity are represented by larger nodes.

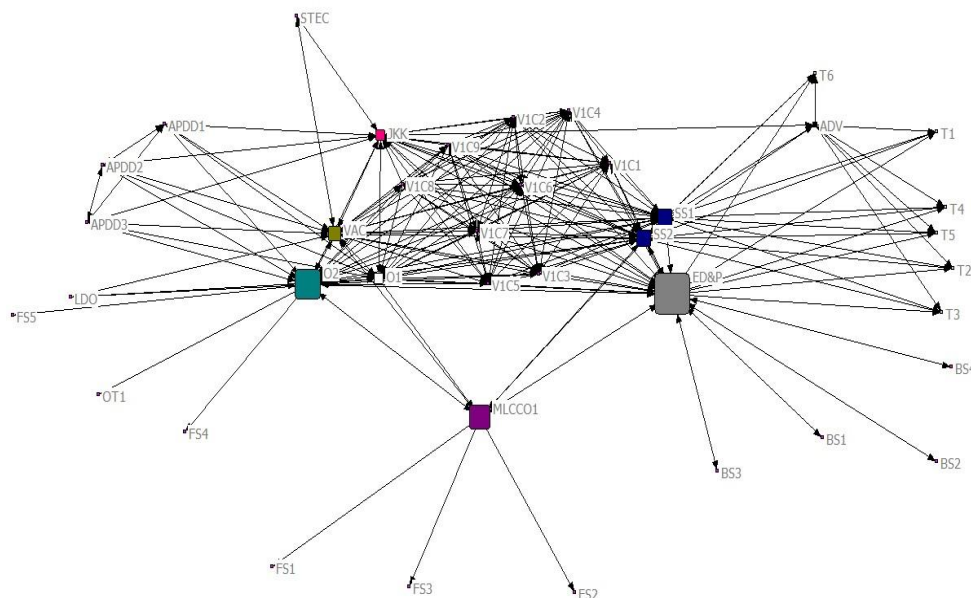


Figure 2. Graphic Representation Of The Betweenness Centrality Between Individual Stakeholders' In The Network At THR; The Node Numbers Represent Individual Respondents Belonging To A Particular Stakeholder, The Larger The Box The Greater Its Betweenness Centrality.

From the social network mapping, the executive director who is a partner in the firm operating THR had the highest degree and betweenness centrality. This highlights the essentiality of the role played by this executive director. He is directly involved in the process of conceptualizing and the development of the ecotourism site and the marketing efforts which are very vital in attracting tourists to the resort and bask in the services offered by TH. Being a private entrepreneur, the executive director has the utmost knowledge of the services offered by the natural resource at TH and what the visitors need. He is able to match the visitors' demand for freshwater swimming and sports by furnishing the resort with freshwater lake and background of natural forest. This is supported by his passion in the tourism industry and his empathy to the local community particularly to the aborigines living in the surrounding village. However, it should be noted that the relationship between the private entrepreneur, village Development

and Security Committee (JKK) and village Orang Asli Aboriginal Chief (Batin) is best described as intriguing.

Firstly, THR management must apply for a license for land ownership and must comply with the rules and regulations exerted by the Aboriginal People Development Department (JAKOA) and the District Land Office if they are to operate their tourism activity. At that time, the first owner of THR discussed together with the village Aboriginal Chief and village Development and Security Committee on the processes of getting the land ownership. However, initially the THR owner made a unilateral decision to get the land approval directly from the District Land Office, bypassing the rules and regulations set by the Aboriginal People Development Department. Due to this affair, the village's Aboriginal Chief and the Development and Security Committee were very dissatisfied, thus igniting suspicions and lack of trust towards the owner of THR. To resolve this, together, the former two stakeholders had a meeting with the Aboriginal People Development Department and District Land Office and suggested preferable changes in the operation of the resort. The new management formed a partnership arrangement with several owners including the executive director that operated a more conciliatory approach. Afterwards, the impasse managed to be overcome and THR successfully applied for a tourism operating license.

The second highest mean degree and betweenness centralities were recorded from the senior staff of THR. As a private venture, this senior staff and the executive director conceptualized, planned, and implemented the tourism project at THR. The senior staff is a Malaysian and although is not part of the local community, is qualified in tourism management and has vast previous experience in managing other tourism resorts. Despite prior difficult experience in the tourism licensing processes and the huge influence of the village Aboriginal Chief at TH, the management at THR did not conduct prior consultation with the village Aboriginal Chief and other local communities. The management was under the perception that the young village aborigines have somewhat an inferiority complex and were lacking in self-confidence to contribute their own ideas and perspectives towards the development of THR ecotourism business despite their indigenous knowledge. Thus, it was not absurd for the local community stakeholders at TH to feel neglected due to the lack of prior consultation in the planning and management of the tourism services at THR. The village Aboriginal local community did desire to exercise full autonomy in their customary roaming area, both in the control and ownership of such lands and in the determination of their way of life. But due to the low rate of work opportunities in the rural area, the aspiration would have to take a backseat for the moment, and they opted to depend on the resort as their source of income. They did not participate on matters relating to decision making within the resort but were nonetheless grateful for the employment opportunities obtained. Despite that, their traditional behaviour of gambling and drinking habit among the Aboriginal workers decreased their working credibility. It is now quite common for workers to be absent a few days after payday due to their involvement in such activities.

However, the THR management realized the significance of engaging the aborigines into the ecotourism business. Efforts were undertaken to train and provide necessary skills to their staff especially among the aborigines to enhance their cognitive skill and social aptitudes. This effort was an attempt to retain THR operations and increase work appreciations.

Implication and Conclusion

The main objective of this study was to identify the stakeholders, their roles in the social network of TH, characterize their relationships between them and establish the effects on governance issues at TH. The network metrics based on the density and geodesic distance's scores and relationships of individual node at TH signified the highest degree and betweenness centralities of the executive director cum partner, which then highlighted his greater power in the social network. TH provides ecotourism services with the participation of the village's indigenous people in water-related activities. In this respect, inclusivity is practiced but the relationship with the local community is not as strong. The village's indigenous chief and village's development committee have a lot of influence among the aborigine community but the promise of employment opportunities for the aborigine people requires him to be conciliatory to the management of THR. The Aboriginal community still perceives that they are small and somewhat a forgotten community with society problems such as poverty, land ownership, social stress, loss of culture, lack of development and education (Means, 1985; AG Gomes, 2004). The social culture among the rural Malaysian community is one of the dilemmas for business owners who attempt to offer socio-economic opportunities and avoidance of conflict (Mohd-Shahwahid et al., 2016). The village's Aboriginal chief and village's development committee fortunately were pragmatic in dealing with the situation. The leaders at the village levels were also aware of the inadequacies of their people and would not want to jeopardize their work and income opportunities. Instead, the village's Aboriginal chief and development and security committee would rather play the intermediary role in assisting the management of the workers from Aboriginal and other races in terms of internal problems at the ecotourism resort site. In return, the resort management provides corporate social responsibility contributions during cultural and religious functions in the village.

Despite a vision of offering ecotourism services, the findings of the social network analysis discovered more of a top-down management approach at the resort. Mechanisms have to be created to take advantage of the findings of this analysis with respect to whom the degree and betweenness centralities are centered on. According to Bopp et al. (2000), "sense of community refers to the quality of human relationships that makes it possible for people to live together in a healthy and sustainable way". Thus, it is reasonable to conclude that the sense of community plays an important role in fostering community support for tourism development and enhancing the tourism's long-term sustainability as a broad basis for tourism development planning (Hall et al., 2005). However, the importance of improvement and the increase of local community participation should not be overlooked. With the mainstreaming of the Aboriginal Orang Asli community, ecotourism sites must raise the opportunity for greater community working partnership, decision making and representation of the community structures (Chapman and Kirk, 2001).

The above suggestion is essential since a lack of direct participation in decision making to implement tourism development and management can definitely lead to failure in the community development (Miranda, 2007). Community stakeholders at the tourism site may feel isolated and that their opinion is insufficiently incorporated in the management of the resort. When important stakeholders' particularly the local community do not feel that they are needed, changes in management aspirations and regulations are difficult to be implemented due to the lack of cooperation and trust. This may lead to the misconception from the community that they do not have sufficient motivation to be involved in managing the site and some may consider their roles as merely to earn profit with no say on the management of the site (Mohd-Shahwahid et al., 2016). In conclusion, the management of the ecotourism services

at TH needs the involvement of the local stakeholders in the pursuit of greater co-management at the resort. The resort would gain much more benefit if they capitalize the existing relationship between each node or stakeholder in the network.

Acknowledgement

First and foremost, the authors like to thank and praise Allah Azzawajalla the Almighty and the Most Merciful for without His blessings and consent, this article could not have been made possible.

The authors are thankful for the research grant IPS under University Putra Malaysia (UPM) (IPS-9508600). The authors also would like to express their gratitude to the advisors, Dr. Mohd Shahwahid Haji Othman for their invaluable guidance and support throughout the research process. Grateful thanks is also owing to the anonymous reviewers for their valuable comments that helped to considerably improve the manuscript. Furthermore, authors would like to extend their heartfelt thanks to all of the participants in their study, who generously shared their time, experiences, and insights with them.

References

- Albrecht, J. N. (2013), "Networking for sustainable tourism – towards a research agenda", *Journal of Sustainable Tourism*, Vol.21, No.5, pp. 639–657. <https://doi.org/10.1080/09669582.2012.721788>.
- Baggio, R., Scott, N., and Cooper, C. (2010), "Network science-a review focused on tourism", *Annals of Tourism Research*, Vol.37. No.3, pp.802–827. <https://doi.org/10.1016/j.annals.2010.02.008>.
- Baggio, R. (2011), "Collaboration and cooperation in a tourism destination: A network science approach", *Current Issues in Tourism*, Vol.14, No.2, pp.183–189. <https://doi.org/10.1080/13683500.2010.531118>.
- Baker, W. E., and Faulkner, R. R. (2002), "Inter-organizational networks. In Joel. A. C. Baum (Ed.)", *The Blackwell companion to organizations*, Malden, MA: Basil Blackwell, pp.520–540.
- Bavelas, A. (1950), "Communication Patterns in Task-Oriented Groups", *The Journal of the Acoustical Society of America*, Vol.22, No.6, pp.725–730. <http://dx.doi.org/10.1121/1.1906679>.
- Biernacki, P., and Waldorf, D. (1981), "Snowball Sampling: Problems and Techniques of Chain Referral Sampling", *Sociological Methods and Research*, Vol.10, No.2, pp.141–163. <https://doi.org/10.1177/004912418101000205>.
- Bodin, O., and Crona, B. I. (2009), "The role of social networks in natural resource governance: What relational patterns make a difference"? *Global Environmental Change Human and Policy Dimensions*, Vol.19, No.3, pp.366–374. <https://doi.org/10.1016/j.gloenvcha.2009.05.002>.
- Bonacich, P. (1987), "Power and Centrality: A Family of Measures", *American Journal of Sociology*, Vol. 92, No.5, pp.1170–1182. <https://doi.org/10.1086/228631>.
- Borgatti, S. P., and Halgin, D. S. (2011), "On Network Theory", *Organization Science*, Vol.22, No.5, pp. 1168–1181. <https://doi.org/10.1287/orsc.1100.0641>.
- Borgatti, S. P., and Li, X. (2009), "On social network analysis in a supply chain context", *Journal of Supply Chain Management*, Vol.45, No.2, pp.5–22. <https://doi.org/10.1111/j.1745-493X.2009.03166.x>.

- Browne, K. (2005), "Snowball sampling: Using social networks to research non-heterosexual women", *International Journal of Social Research Methodology: Theory and Practice*, Vol.8, No.1, pp.47–60. <https://doi.org/10.1080/1364557032000081663>.
- Buckley, R. (2009), "Evaluating the Net Effects of Ecotourism on the Environment: A Framework, First Assessment and Future Research", *Journal of Sustainable Tourism*, Vol.17, No.6, pp.643–672. <https://doi.org/10.1080/09669580902999188>.
- Burt, R. S. (1992), *Structural holes: The social structure of competition*. Cambridge, MA: Harvard University Press.
- Burt, R. S. (2005), *Brokerage and social closure*. Oxford, United Kingdom: Oxford University Press.
- Comte, A. (1854). *The positive philosophy of Auguste Comte* (Vol. 2). (H. Martineau, Trans.). New York: D.Appleton and Company.
- Crona, B., and Bodin O. (2006), "What you know is who you know? Communication patterns among resource users as a prerequisite for co-management", *Ecology and Society*, Vol.11, No.2, pp.7. <https://doi.org/10.5751/ES-01793-110207>.
- Dola, K., and Mijan, D. (2006), "Public Participation in Planning for Sustainable Development: Operational Questions and Issues", *International Journal on Sustainable Tropical Design Research and Practice*, Vol.1, No.1, pp.1-8. <http://psasir.upm.edu.my/id/eprint/2421>.
- Durkheim, E. (1951), *Suicide: A study in sociology*. New York: Free Press.
- Feld, S. (1981), "The focused organization of social ties", *American Journal of Sociology*, Vol. 86, No.5, pp.1015–1035. <https://doi.org/10.1086/227352>
- Forstner, K. (2004), "Community ventures and access to markets: The role of intermediaries in marketing rural tourism products", *Development Policy Review*, Vol.22, No.5, pp. 497-514. <https://doi.org/10.1111/j.1467-1467.2004.00262.x>
- Freeman, L. C. (1977), "A Set of Measures of Centrality Based on Betweenness", *Sociometry*, Vol.40, No.1, pp.35-41. <https://doi.org/10.2307/3033543>
- Freeman, L. C. (1978), "Centrality in social networks conceptual clarification"; *Social Networks*, Vol 1, No.3, pp.215–239. [https://doi.org/10.1016/0378-8733\(78\)90021-7](https://doi.org/10.1016/0378-8733(78)90021-7).
- Giampiccoli, A. and Mtapuri O. (2012), "Community-based tourism: an exploration of the concept(s) from a political perspective", *Tourism Review International*, Vol.16, No.1, pp.29-43. <https://doi.org/10.3727/154427212X13431568321500>
- Granovetter, M. (1985), "Economic action and social structure: The problem of embeddedness", *American Journal of Sociology*, Vol. 91, No.3, pp 481–510. <https://doi.org/10.1086/228311>.
- Hall, D. R., Kirkpatrick, I., and Mitchell, M. (2005), *Rural tourism and sustainable business*. Clevedon, United Kingdom :Channel View Publications.
- Hamzah, A., and Mohamad, N. H. (2012), "Critical success factors of community based ecotourism: Case study of Miso Walai Homestay, Kinabatangan, Sabah", *Malaysian Forester*, Vol.75, No.1, pp.29–42.
- Harris-Roger. W. (2009), "Tourism in Bario, Sarawak, Malaysia: A Case Study of Pro-poor Community-based Tourism Integrated into Community Development", *Asia Pacific Journal of Tourism Research*, Vol.14, No.2, pp.125-135. <https://doi.org/10.1080/10941660902847179>
- Heider, F. (1946), "Attitudes and cognitive organization", *Journal of Psychology*, Vol.21, No.1, pp.107–121. <https://doi.org/10.1080/00223980.1946.9917275>

- Honggang, X. U., T. Sofield and B.A.O. Jigang. (2009), "Community tourism in Asia: An introduction", in: B.A.O. Jigang (ed), *Tourism and community development. Asian practices*, Madrid: World Tourism Organization, pp.1-17.
- Kaplan, C. D., Korf, D., and Sterk, C. (1987), "Temporal and social contexts of heroin-using populations. An illustration of the snowball sampling technique", *Journal of Nervous and Mental Disease*, Vol.175, No.9, pp.566 - 574. <https://doi.org/10.1097/00005053-198709000-00009>
- Kazushige Yamaki (2017), "Applying social network analysis to stakeholder analysis in Japan's natural resource governance: Two endangered species conservation activity cases", *Journal of Forest Research*, Vol.2, No.2, pp. 83-90. <https://doi.org/10.1080/13416979.2017.1279706>
- Kilduff, M., and Brass, D. J. (2010). "Organizational social network research: Core ideas and key debates", *The Academy of Management Annals*, Vol.4, No.1, pp.317–357. <https://doi.org/10.1080/19416520.2010.494827>
- Kim, Y., Choi, T. Y., Yan, T., and Dooley, K. (2011), "Structural investigation of supply networks: A social network analysis approach", *Journal of Operations Management*, Vol.29, No.3, pp.194–211.
- Leavitt, H. J. (1951), "Some effects of certain communication patterns on group performance", *The Journal of Abnormal and Social Psychology*, Vol.46, No.1, pp. 38–50. <https://doi.org/10.1037/h0057189>
- Lee, S., Choi, J., Yoo, S., and Oh, Y. (2013), "Evaluating spatial centrality for integrated tourism management in rural areas using geographic information systems (GIS) and network analysis", *Tourism Management*, Vol.34, pp.14-24. <https://doi.org/10.1016/j.tourman.2012.03.005>
- Leung, X. Y., Wang, F., Wu, B., Bai, B., Stahura, K. A., and Xie, Z. (2012), "A social network analysis of overseas tourist movement patterns in Beijing: The impact of the Olympic Games", *International Journal of Tourism Research*, Vol.14, No.5, pp.469–484. <https://doi.org/10.1002/jtr.876>
- Lienert J, Schnetzer F, Ingold K. (2013), "Stakeholder analysis combined with social network analysis provides fine-grained insights into water infrastructure planning processes", *Journal of Environmental Management*, Vol.125, pp.34–148. <https://doi.org/10.1016/j.jenvman.2013.03.052>
- Lewin, K. (1936), *Principles of topological psychology*. New York: McGraw-Hill.
- Mckinney, T. (2016), *Ecotourism*. The International Encyclopedia of Primatology, pp.1-2.
- Morrison, A.M., Bruen, S.M., and Anderson, D.J. (1998), "Convention and Visitor Bureaus in the United States of America: A profile of bureaus, bureau executives, and budgets", *Journal of Travel and Tourism Marketing*, Vol 7, No.1, pp.1-19. https://doi.org/10.1300/J073v07n01_01
- Mohd-Shahwahid H.O, Mohd-Iqbal M.N, Amiramas-Ayu A.M, Rahinah.I and Mohd-Ihsan M.S. (2016), "Social network analysis of Kampung Kuantan Fireflies Park, Selangor and the implications upon its governance", *Journal of Tropical Forest Science*, Vol. 28, No.4, pp.490–497.
- Moliterno, T. P., and Mahony, D. M. (2011), "Network theory of organization: A multilevel approach", *Journal of Management*, Vol.37, No.2, pp.443–467. <https://doi.org/10.1177/0149206310371692>
- Moscardo, G. (2008), *Building Community Capacity for Tourism Development* (Ed), Wallingford, Oxfordshire, United Kingdom : CABI.

- Mtapuri, O. and A. Giampiccoli.(2013), "Interrogating the role of the state and nonstate actors in community-based tourism ventures: Toward a model for spreading the benefits to the wider community", *South African Geographical Journal*, Vol.95, No.1, pp.1-15. <https://doi.org/10.1080/03736245.2013.805078>.
- Okazaki E., (2008), "A Community-Based Tourism Model: Its Conception and Use", *Journal of Sustainable Tourism*, Vol.16, No.5, pp.511-529. <https://doi.org/10.1080/09669580802159594>
- Paletto A, Balest J, Demeo I, Giacobelli G, Grilli G. (2016), "Power of forest stakeholders in the participatory decision making process: A case study in Northern Italy", *Acta Silvatica et Lignaria Hungarica*, Vol.12, No.1, pp.9–22. <https://doi.org/10.1515/aslh-2016-0002>
- Paletto A, Hamunen K, De Meo I. (2015), "Social network analysis to support stakeholder analysis in participatory forest planning. *Society and Natural Resources*, Vol.28, No.10, pp.1–18. <https://doi.org/10.1080/08941920.2015.1014592>.
- Pavlovich, K. (2003), "The evolution and transformation of a tourism destination network: The Waitomo Caves, New Zealand", *Tourism Management*, Vol.24, No.2, pp.203–216. [https://doi.org/10.1016/S02615177\(02\)00056-0](https://doi.org/10.1016/S02615177(02)00056-0)
- Prell C, Hubacek K, Reed M. (2009), "Stakeholder analysis and social network analysis in natural resource management", *Society and Natural Resources*, Vol.22, No.6, pp.501–518. <https://doi.org/10.1080/08941920802199202>
- Prime Minister Department (2015). *Economic transformation plan 2014*. Government of Malaysia, Putrajaya: ETP Annual Report.
- Sandström, A., and Rova, C. (2010), "The network structure of adaptive governance : a single case study of a fish management area", *International Journal of the Commons*, Vol.4, No.1, pp.528–551. <http://doi.org/10.18352/ijc.156>
- Schaffer, V., and Lawley, M. (2012), "An analysis of the networks evolving from an artificial reef development", *Current Issues in Tourism*, Vol.15, No.5, pp.497–503. <https://doi.org/10.1080/13683500.2011.638704>
- Scholt J.T. and Wang C.L. (2006), "Cooptation or transformation? Local policy network and federal regulatory enforcement", *American Journal of Political Science*, Vol.50, No.1, pp.81–97. <https://doi.org/10.1111/j.1540-5907.2006.00171.x>
- Shih, H. Y. (2006), "Network characteristics of drive tourism destinations: An application of network analysis in tourism", *Tourism Management*, Vol.27, No.5, pp.1029-1039. <https://doi.org/10.1016/j.tourman.2005.08.002>
- Simpson, M. C. (2008), "Community benefit tourism initiatives—A conceptual oxymoron?", *Tourism Management*, Vol.29, No.1, pp. 1-18. <https://doi.org/10.1016/j.tourman.2007.06.005>
- Stone. M.T. (2015), "Community-based ecotourism: a collaborative partnerships perspective", *Journal of Ecotourism*, Vol.14, pp.2-3 (in press). <https://doi.org/10.1080/14724049.2015.1023309>
- Sufahani, S., Muhammad, M., and Zuhaimy Ismail. (2016), "The Statistical Analysis of the Tourist's Summary Profile and Behavior in Kelantan, Malaysia", *International Journal for Research and Development in Technology*, Vol. 6, No.3, pp.54-58.
- Telfer, D., (2001), "Strategic alliances along the Niagara Wine Route", *Tourism Management*, Vol.22, No.1, pp.21-30. [https://doi.org/10.1016/S0261-5177\(00\)00033-9](https://doi.org/10.1016/S0261-5177(00)00033-9)
- Tinsley, R., and Lynch, P.A. (2001), "Small tourism business networks and destination development", *International Journal of Hospitality Management*, Vol.20, No.4, pp.367-378. [https://doi.org/10.1016/S0278-4319\(01\)00024-X](https://doi.org/10.1016/S0278-4319(01)00024-X)

- TIES (2015, January 7). *What is Ecotourism?* viewed 21 November 2018. <https://www.ecotourism.org/what-is-ecotourism>.
- Travers, J., and Milgram, S. (1969), "An experimental study of the "small world" problem", *Sociometry*, Vol.32, No.4, pp.425-443. <http://dx.doi.org/10.2307/2786545>
- Truly Asia (2018), *Featured Destination Episode 1 – The Amazing Tadam Hill Resorts*, viewed 21 November 2018, <http://www.trulyasia.tv/tadam-hills-resorts>.
- Tichy, N. M., Tushman, M. L., and Fombrun, C. (1979), "Social network analysis for organizations", *The Academy of Management Review*, Vol.4, No.4, pp.507-519. <https://doi.org/10.2307/257851>
- Uzzi, B. (1996), "The sources and consequences of embeddedness for the economic performance of organizations: The network effect", *American Sociological Review*, Vol.61, No.4, pp. 674–698. <https://doi.org/10.2307/2096399>
- Uzzi, B., and Spiro, J. (2005), "Collaboration and creativity: The small world problem", *American Journal of Sociology*, Vol.111, No.2, pp.447–504. <https://doi.org/10.1086/432782>
- Wang, Y., and Xiang, Z. (2007), "Toward a theoretical framework of collaborative destination marketing", *Journal of Travel Research*, Vol.46, No.1, pp.75–85. <https://doi.org/10.1177/0047287507302384>
- Wellman, B. (1988), *Structural analysis in the social sciences, Vol. 2. Social structures: A network approach*, New York, NY, US: Cambridge University Press, pp. 19-61.
- White, H. C., Boorman, S. A., and Breiger, R. L. (1976), "Social structures from multiple networks, I. Blockmodels of roles and positions". *American Journal of Sociology*, Vol.81, No.4, pp.730–780. <https://doi.org/10.1086/226141>
- Zapata, M. J., Hall, M.C., Lindo, P., and Vanderschaeghe, M. (2011), "Can community-based tourism contribute to development and poverty alleviation? Lessons from Nicaragua", *Current Issues in Tourism*, Vol.14, No.8, pp.725-749. <https://doi.org/10.1080/13683500.2011.559200>