Tourism Management Perspectives 18 (2016) 59–67

Contents lists available at ScienceDirect

Tourism Management Perspectives

journal homepage: www.elsevier.com/locate/tmp

Social network analysis in tourism services distribution channels

Mai T.T. Tran [a], Ananda S. Jeeva [b,*], Zahra Pourabedin [c]

[a] Curtin University, School of Information System, Perth, Australia
[b] UCSI University, Faculty of Business and Information Science, Cheras, Kuala Lumpur, Malaysia
[c] UCSI University, Faculty of Business and Information Science, Cheras, Kuala Lumpur, Malaysia

ARTICLE INFO

Article history:
Received 13 November 2014
Received in revised form 15 December 2015
Accepted 8 January 2016

Keywords:
Tourism distribution network
Network analysis
Case study
ORA

ABSTRACT

Application of network analysis in tourism research is relatively new, especially in the study of tourism services distribution channels. Network analysis is employed to investigate the structure and pattern of relationships between actors in a network. This paper applies NA with Organizational Risk Analysis software to analyse tourism services distribution channels. The data is collected from a major tour operator in Hanoi and its travel agent network. The results of the research show the pattern of the network between tour operators and travel agencies; and between tour operators. Network analysis also reveals the cooperation and cohesion of the network as well as the network dynamics between the case study tour operator and its travel agencies over a period of time.

1. Introduction

Tourism distribution channel is considered to be a narrow definition of tourism supply chain, which focuses on the distribution and marketing activities (Song, 2012; Zhang, Song, & Huang, 2009). There are several entities in tourism distribution channels such as services suppliers, tour operators, travel agencies and customers (Bitner & Booms, 1982). These relationships in tourism distribution channels have been studied from different perspectives such as game theory and traditional product marketing channels. Despite the prominent use of social network analysis in relationships between entities in tourism, there is a lack of application of network analysis in analysing tourism services distribution channels.

Social network analysis and network analysis are perceived as similar in many research publications since it became popular in the 1990s. This paper adopts the term network analysis instead of social network analysis. Network analysis is an approach and set of techniques used to study the exchange of resources among actors within the network. Resources may be goods, services, money or information. Network analysis reveals the pattern of relationships, the availability of resources and the exchange of resources between the actors (Haythornthwaite, 1996). Network analysis has been employed with numerous applications in different fields of research such as shareholding network, community structure, political and policy network, social movements, economics and geography (Carrington, 2011).

In tourism arena research, network analysis has been applied to identify and examine the relationships in tourism; such as relationship between tourists' groups, relationships between stakeholders in tourism destination, web connections between tourism companies or stakeholders' relationships for sustainable tourism (Stokowski, 1994; Timur & Getz, 2008; Pavlovich, 2001; Pavlovich, 2003; Baggio, 2009, 2010; Bhat & Milne, 2008; Costa & Baggio, 2009; Erkus-Ozturk & Eraydin, 2010; Scott, Baggio, & Cooper, 2011; van der Zee & Vanneste, 2015). However, this methodology has not been applied to analyse relationships between actors within tourism services distribution channels or tourism services distribution network. Therefore, the aim of this paper is to utilize network analysis to study the relationships between entities in Hanoi tourism services distribution channels. By using a case study method, this paper attempts to fill the gap of application of network analysis in tourism services distribution channels.

2. Literature review

2.1. Network analysis in tourism

Network analysis has been applied in tourism studies to identify and examine the relationships in tourism. Network analysis was first used in tourism study by Stokowski (1994) to examine the tourists' behaviour and relationship between tourist groups. The author also suggests that social network analysis "should be broadly conceived to address relations between external resort or hotel operators and local labourers, relations between tourist-trading governments and other relationships of significance in the production of tourist destinations".

* Corresponding author at: UCSI University, Faculty of Business and Information Science, Kuala Lumpur, Malaysia.
E-mail addresses: t.tran45@postgrad.curtin.edu.au (M.T.T. Tran), anandajeeva@ucsiuniversity.edu.my (A.S. Jeeva), zahra@ucsiuniversity.edu.my (Z. Pourabedin).

http://dx.doi.org/10.1016/j.tmp.2016.01.003
2211-9736/

There are many authors who have applied network analysis in analysing the relationships in tourism industry such as Timur and Getz (2008); Pavlovich (2001, 2003); Baggio (2007); Erkus-Ozturk and Eraydin (2010); and Scott et al. (2011). There are two main streams of application of network analysis in tourism research. The first stream is using network analysis to understand the evolution of business networks and analyse inter-organizational relationships. The second stream is applying network analysis in tourism policy, including analysing public-private relationships and structure of tourism governance with the involvement of all stakeholders in tourism. The literature review of these publications is shown in Table 1 as two streams.

In general, network analysis has been applied in different areas of tourism (destination development, sustainable tourism, urban tourism etc.), different network types (communication network, virtual network, collaborative network) with different network measurement (density, structure holes, strong/weak tie, clustering, efficiency etc.). However, the distribution network area has received very little attention (Holma, 2004; Go & Williams, 1994). Although these literature discuss the movement or the changes of distribution channel network, they do not provide any network measurement to prove their conclusions. This paper, by using the Organizational Risk Analysis (ORA) network analysis software by CASOS, analyses the tourism services distribution network with several network measurements. These measurements provide better explanations for investigating networks.

The network of entities in tourism services distribution channels may be seen as business networks; therefore, the study of relationships between different tourism services distribution channels is warranted. The review of literature has revealed that, there are few publications using network analysis to analyse the relationships in tourism services distribution channels. In addition, these publications do not pay attention in analysing network dynamics or the changes in network over time.

Analysing network dynamics with the consideration of time is the "emergent scientific field" in network studies (Carley & Columbus, 2013). This approach is suitable for the network analysis where actors are changing frequently. As claimed by Zhang et al. (2009), tourism is a dynamic industry with the evolution of tourism services supply chain relationships and this dynamics need to be analysed in-depth. Recording and measuring the changes of actors and links in the network can show the changes of structure and relationships in the network. However, there is still lack of research of relationship dynamics in networks. The dynamics of a network can be seen in the research of Pavlovich (2003) about evolution and transformation in a tourism destination at Waitomo Caves, New Zealand. The author compared network structures of destinations in publications in the years 1910, 1986 and 2000 to understand the inter-organizational relationships and partnerships between actors in the destinations. In addition, Pavlovich (2014) conducted another research about evolution and transformation of a tourism destination with the comparison of nodal structure of a tourism destination in 1910, 1986 and 2003. The author proved the temporal connections between nodes (actors) in the structure or in the network of entities in the tourism destinations.

Table 1
Literature review of publications using network analysis in tourism.

Author, year	Kind of network/relationships	Network measurements
1. Inter-organizational relationships or business networks		
Scott et al. (2011)	Communication network and virtual network of tourist organizations in Elba, Italy	Density, path, clustering coefficient, proximity ratio, efficiency (global and local), assortative mixing coefficient
Costa and Baggio (2009)	Web of connections between tourism companies in Elba, Italy	Size, density, disconnected nodes, diameter, path, clustering coefficient, proximity ratio, centrality, efficiency (global and local), assortativity coefficient
Holma (2004)	The triadic business relationship in travel distribution: buyers (travellers) – intermediaries (travel agencies) – sellers (service suppliers).	No specific network measurement
Pavlovich (2003)	Relationship between the Waitomo destination with the related tourism stakeholders to develop the competitiveness of the tourism destination	Centrality, density, strong ties/weak ties
Tinsley and Lynch (2001)	Small tourism business networks	No specific network measurement
2. Public-private relationships, structure of tourism governance		
Kimbu and Ngoasong (2012)	Tourism industry stakeholders in Sub-Saharan Africa	Network structure, mobilization of network, strength of weak ties, strong interlocking ties, cross-cutting ties, structural equivalence
Conway and Cawley (2012)	The network of local authorities, national tourism bodies, regional and rural development groups and ecotourism providers in ecotourism destination development (Greenbox, Ireland)	Using matrices to visualize the links and network in the ecotourism destination
Baggio (2007)	Network of local stakeholders, tourism operators in tourism destination (Elba, Italy)	Distribution degree, link density, betweenness
Baggio and Cooper (2010)	Network of stakeholders in tourism destination, including both public and private organizations in term of transferring knowledge.	Degree distribution, average path length, clustering coefficient, efficiency (global and local), assortativity coefficiency, size, disconnected nodes, centrality
Baggio and Cooper (2010)	Network of stakeholders in term of information diffusion in Elba, Italy	Density, path, clustering coefficient, proximity ratio, local and global efficiency, assortative mixing coefficient
Watts (2009)	Control and communication in collaborative policy implementation networks	NETWORK mapping
Hede and Stokes (2009)	Network of stakeholders associated with Airey's Inlet Farmers' Market	No specific network measurement
Timur and Getz (2008)	Stakeholders network for sustainable urban tourism	Density, centrality of the network
Bhat and Milne (2008)	Inter-organizational cooperation in destination marketing	Embeddedness, density and centrality
Baggio (2010)	Relationships between stakeholders in tourism destination	Clustering and assortativity coefficients
Leung et al. (2012)	Overseas tourist movement patterns in Beijing with the impact of the Olympic Games	Size, density, betweenness centralization
Erkus-Ozturk and Eraydin (2010)	Collaborative networks and organization building in Antalya tourism region	Using UCINET 6 software
McLeod, Vaughan, and Edwards (2010)	Network of business people within a tourism destination in term of sharing knowledge	Density, structure holes, number of weak components, brokerage, betweenness