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Research Paper

Change and stability in shopping tourist destination networks: The case of Seoul in Korea

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ABSTRACT

Despite the importance of shopping tourists in tourism destinations, the examination of the movements of this lucrative segment is insufficient. This study aims to analyze attractions networks in the Seoul Capital Area that are selected by shopping tourists, as well as to identify whether their attraction networks are stable or dynamic. Specifically, the centralities and the spatial structure of 28 attractions were identified to examine the features of the changing attraction networks. The Gini coefficients of centralities were measured to detect the inequality of link distribution. It was investigated whether networks follow a power law each year to detect the changes in destination networks. Finally, changing networks were visualized through link reduction modules featuring improved readability.

The results of this study are as follows: (1) this study reveals shopping tourists' attraction preference through centrality analysis. The attractions that shopping tourists visited encompass both shopping and non-shopping areas; (2) Sinchon/Hongik University and Namsan Hanok Village were identified as increasingly popular attractions for shopping tourists; (3) Gini coefficients of degree distribution for shopping tourists' attraction networks were higher over the three-year period compared with those of general tourists, indicating that the former choose tourist attractions in a homogeneous manner; and (4) Attraction networks followed the power law in 2013 but not in 2014 and 2015.

1. Introduction

Destinations depend on their primary and secondary attractions as a pull force motivating tourists to visit them (Benur & Bramwell, 2015). It is worth stressing that the marketing strategy of a destination should be comprehensive and cooperative, reflecting the relationship among tourist attractions (Fyall, Leask, & Garrod, 2001; Soteriades, 2012). Understanding tourists' paths connecting attractions and destination touch points promotes collaborative destination marketing (Stienmetz & Fesenmaier, 2015). In other words, the spatial linkages between attractions offer clues for joint marketing among tourist sites (Żemła, 2014). Attraction networks formed by tourist movements offer insights into the intertwined and ongoing endogenous changes in the relationship of attractions from the perspective of visitors. Furthermore, understanding traveler-activated networks could guide the redesign of urban tourism policy in terms of the diversity of tourist attraction attributes and spatial proximity. Thus, attraction network analysis will facilitate inter-destination cooperation.

Shopping tourists are a valuable segment for tourist destinations as a result of increased local revenues. Prior studies have shown that shopping tourists stay longer and spend more compared with general tourists (Choi, Heo, & Law, 2016). Jin, Moscardo, and Murphy (2017) recently presented the issue of shopping settings and destination preference. However, prior studies have lacked knowledge on shopping tourist attraction choices and their movement between destinations. Many prior studies have suggested that motivation plays a crucial role in tourists' movement patterns (Lau & McKercher, 2006). Shopping tourists engage in the attraction selection process while they are pushed by their desires and pulled by attractions. Attractions networks analysis helps to understand the current states of their attraction preference and increase the accuracy of tourism demand forecasts. Therefore, shopping tourists' network analysis could support destination management.

More importantly, it should be noted that destination networks are dynamic in nature (McKercher, 1999). Tourism involves the movement of tourists through time and space (Leung et al., 2012). Tourism destinations experience evolution and transformation beyond a static and fixed state as tourism environments and demand changes. Therefore, there is the need for in-depth understanding of destination network changes in a specific local context (Pavlovich, 2014). To cope with these demands and changes, it is imperative to examine and detect the

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spatial changes of tourist destinations and attraction preferences in the evolving destination networks. A network approach has the advantages of identifying in what way the structure of attractions develops, and how their relationship evolves over time.

This research addresses the following questions: (a) what are the attraction networks of shopping tourists? and (b) how do attraction networks change over time? The research objectives were as follows: (i) to identify attraction networks from the perspective of nodal centrality and linkages; (ii) to examine their degree of distribution by utilizing Gini coefficients; and (iii) to test the power law to detect changes in destination networks. To achieve these aims, attraction networks in the Seoul Capital Area, Korea, were analyzed. The area was chosen because many overseas travelers consider shopping to be an important reason for visiting Korea The literature on networks and shopping tourism was reviewed. Link reduced networks were visualized to distinguish the core from the periphery areas within attraction networks. Finally, theoretical and managerial implications are discussed based on the analysis.

2. Theoretical background

2.1. Shopping tourism

The designation ‘shopping tourists’ refers to tourists whose primary purpose and motivation for a trip is shopping (Choi et al., 2016). Shopping has become a principal motive for travel, and of increasing importance to destinations. For tourists, shopping is among the important tourism activities, affecting their satisfaction and revisit intentions (Heung & Cheng, 2000). However, tourist shopping activities have multidimensional aspects and a single-purpose shopping model is controversial (Shi, Wu, & Wang, 2015). Whether shopping tourists exhibit single- or multi-purpose behavior in terms of movement around destinations is highly contested. It is reasonable to consider that shopping tourists visit attractions with shopping malls and department stores. However, do they only visit commercial shopping districts? For example, Arentze, Oppewal, and Timmermans (2005) proposed a multi-purpose shopping trip model in which they examine the relation between shopping trip purpose and destination choice. An appropriate combination of well-designed shopping facilities and diverse cultural activities might contribute to destination attractiveness for shopping tourists.

Although shopping tourists have garnered increased attention from researchers and destination marketers, empirical studies regarding shopping tourists' mobility have been scarce owing to the labor-intensive nature and time-consuming process. For example, Chang and Hsieh (2006) stated that the primary characteristic of shopping tourists in night markets in Taiwan tends to show a high level of mobility. Kemperman, Borgers, and Timmermans (2009) found that there are significant differences in movements of hedonic shopping tourists and utilitarian shopping tourists. Shopping tourists featuring hedonic motivation prefer walking around in the shopping area, whereas utilitarian shoppers prefer more efficient routes. In other words, hedonic shoppers are less sensitive to distance than utilitarian ones. In this context, it is necessary to understand the movement features and attraction choice of shopping tourists for successful destination management.

2.2. Network research in tourism

Network analysis has drawn great interest in recent years (Viren, Vogt, Kline, Rummel, & Tsao, 2015). In the tourism domain, the network analysis method has been applied to analyze the complexity of ties among tourism stakeholders, tourism research collaborations, and traveler activity networks (Fyall, Garrod, & Wang, 2012). Concerning the first research stream, Beritelli and Laesser (2011) conducted tourism organizational network analysis by examining power relationships in the interconnected networks of stakeholders in an Alpine tourist destination. Baggio, Scott, and Cooper (2010) demonstrated the positive impacts of stakeholder cohesion and adaptive capacity on information diffusion within Elba island networks. The second stream of network literature encompasses research collaboration. For example, Ye, Li, and Law (2013) evaluated introversive and extroversive collaboration features in the context of tourism and hospitality through network analysis.

The third stream of network literature explores the relationship to attractions formed by tourist flows. Attraction networks formed by tourist movements reveal the interconnected relationship among attractions. Network analysis can thus help to identify the most central and influencing attractions in the destination network (Del Chiappa & Baggio, 2015). Shih (2006)'s seminal study offered the overview of the structural characteristics of 16 tourism destinations in Taiwan based on the data obtained from the flow of 2142 tourists through network indicators. According to this study, the attractions in border positions that have more connections with adjacent nodes serve as an intermediary function between other places. Stienmetz and Fesenmaier (2015) estimated the value of Baltimore's attractions network in Maryland using data from the activated path of 1102 travelers. They found that the degree centrality of a place is a good predictor of its marginal economic impact on total trip expenditure. Leung et al. (2012) examined the changes of overseas tourist movement patterns based on 500 online trip diaries in Beijing over three periods (before, during, and post the Olympics) using content and network analyses. This study revealed how the Olympics influenced the networks in terms of an increasing number and an expanded area of visited places. In this way, previous studies on networks provide support to the notion that destinations must not be viewed as an independent entity but as interrelated within the network.

3. Measurement of centrality

Centrality measures node importance at the node level. Measuring node centrality involves several concepts, including degree, closeness, between-ness, and eigenvector centralities. The importance of nodes differs depending on the indicator. First, degree centrality refers to the centrality of a node in terms of the number of nodes to which a particular node directly connects (Tasci, Khalilzadeh, Pizam, & Wang, In press). Degree centrality is calculated as the number of direct ties that involve a given node. Second, eigenvector centrality considers the strength of ties and indirect ties among nodes, whereas degree centrality only considers the strength of direct ties (Shih, 2006). Third, between-ness centrality measures the extent to which a specific node lies between the other nodes in the set of nodes. In other words, between-ness centrality is determined by how many times actors play an intermediary role or broker. Fourth, closeness centrality is determined by the shortest path lengths linking actors (Shih, 2006). It indicates a node's closeness to all network members, contrary to degree centrality that measures only a node's connections to immediate neighbors.

4. Method

4.1. Research procedure and focus

Fig. 1 presents the research procedure employed in this study. In Step 1, this study targeted overseas tourists' movement data obtained from the International Visitor Survey. The International Visitor Survey is annually released by the Korea Tourism Knowledge and Information System (The Korea Tourism Knowledge and Information System, 2015). The secondary data is relatively credible in terms of the data collection process sponsored by the Korea Ministry of Culture, Sports, and Tourism. For example, more than 10,000 overseas tourists were chosen randomly by qualified interviewers every month at two main harbors (i.e. Incheon and Busan) and four major international airports (i.e. Incheon, Gimpo, Gimhae, and Jeju). Movement data were preprocessed using Microsoft Excel in Step 2, and then the network matrix was