Market size, scale economies, and tourism market structure: A case of historic water town tourism in China

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HIGHLIGHTS
- Structural evolution of historic water town tourism market in China is examined.
- Market dynamic simulation is performed using D-S model and ABM on Netlogo platform.
- Scale economies and market size are opposite forces for market structure evolution.
- First-movers have advantages in fixed cost investment and late entrants have to compete on innovation and differentiation.
- Market structure evolution shows complexity, historical contingency and path dependence.

ABSTRACT
The historic water towns in the Tai Lake Basin are representative of tourism products featuring a unique cultural heritage landscape and the local way of life in eastern China. Since the 1980s, this market has experienced phenomenal growth in both the quantity of water towns and the scale of tourist arrivals. Drawing from industrial economics theory and an agent-based modeling approach, we examine the structural evolution of this market. Simulation results show that scale economies and market size are a pair of opposite forces driving the evolution of the historic water town tourism market structure, where scale economies play a role as a barrier to deter potential entrants and ensure superprofits for existing water towns, while an expanding market size creates opportunities for entry. Theoretical and practical implications are discussed, and management recommendations are made for tourism destinations competing with identical products and services.

1. Introduction
Rapid industrialization and urbanization in China have motivated Chinese domestic tourists to search for a nostalgic experience in small traditional towns and villages with a distinct cultural heritage. Historic water towns in the Tai Lake Basin, including north of the Zhejiang province, south of the Jiangsu province, and in the Shanghai metropolitan area, have evolved as heritage towns for mass tourism consumption. Designated as Historic and Cultural Towns and Villages by China's Ministry of Housing and Urban-Rural Development (MHURD) and the State Administration of Cultural Heritage (SACH) and rigorously developed by local township government and entrepreneurs, many historic water towns have undergone significant transformation in the development and commodification of heritage (Bian, 2010; Fan, Wall, & Mitchell, 2008, 2009; Huang, Wall, & Mitchell, 2007; Jiang & Su, 2013). Realizing the potential economic benefits of tourism development to the local economy, water towns in the Tai Lake Basin, particularly those just designated by MHURD and SACH in February 2014, have been racing to develop and promote water town heritage for tourism business. The competitive landscape for historic water town tourism will continue to be intensified in the region as late entrants aspire to enter the market.

Several studies have examined the evolution of historic water towns in the Tai Lake Basin using the creative destruction model.
Huang et al. (2007) first applied the five-stage creative destruction model to examine the evolutionary process of Zhujiajiao in the Jiangsu province and found rapid commodification of heritage in this historic water town, which fits the second stage of the model: advanced commodification. Two later studies investigated the development of another historic water town in the Jiangsu province, Luzhi, using the same model to analyze entrepreneur involvement, profit-seeking behavior, and consumer motivation for heritage experience (Fan et al., 2008, 2009). These studies found that Luzhi was in the latter stage of advanced commodification and was moving toward the early destruction stage if no limit was placed on the number of arrivals. Also applying the creative destruction model, Jiang and Su (2013) examined the transformation of the place-based identity of Zhouchuang, a leader in the historic water town tourism market, and found fragmented social relationships, social identity decline, and loss of a sense of place. All four studies noted the predominant role of the local government in driving all aspects of tourism development in historic water towns, including investing in infrastructure and new products, planning and regulating, and managing promotions and operations, which differs markedly from heritage tourism in small towns in western countries (Fan et al., 2008, 2009; Huang et al., 2007; Jiang & Su, 2013).

These studies focused on the evolutionary process of individual water towns without comparatively analyzing the factors affecting the market structure of this typical tourism product in the Tai Lake Basin. In contrast, the current study analyzed a network of similar historic water towns as identical tourism products in the Tai Lake Basin by examining the tourism market structure determined by market size and scale economies. Historic water towns were selected to study tourism market structure for two reasons: (1) the historic water towns in this region are unique tourism markets in China, enjoying an endowment of resources that cannot be replicated elsewhere; and (2) tourism to the historic water towns has experienced phenomenal growth in the past decades, with market leaders holding a dominant position and new entrants struggling to be competitive.

Therefore, we analyzed the effect of market size and scale economies on the structural evolution of the historic water town tourism market. To our knowledge, this is the first application of industrial economics theory and agent-based modeling (ABM) to the study of tourism market structure using a sample of similar historic water towns over time. The theoretical model developed from this study fills a gap in tourism market structure research and sheds new light on the planning, organization, management, and sustainability of a tourism market. On the practical side, as historic water town tourism is the representative tourism product in the Tai Lake Basin, this study helps policy makers, planners, and destination stakeholders better understand the evolution path of the water town tourism market and formulate effective competitive strategies.

2. The study of market structure

Market structure is one of the principal theoretical concepts of industrial organization (IO) research (Deng & Ma, 2010; Mazzeo, 2002; Mougeot & Naegelen, 2005). It can be defined as the number of firms in the market that provide similar products and services as well as the relationships of the firms in the market (Tirole, 1988). Competition in the market is the main characteristic of market structure analysis, and the types of competition include perfect competition, monopolistic competition, oligopoly, and monopoly. Firms tend to behave differently under different market structures. The study of market structure is typically performed to determine (1) market size, i.e., the size of market demand and supply (number of buyers and sellers in the marketplace); (2) economies of scale, focusing on the analysis of comparative costs; (3) product substitution; and (4) ease of entry or exit for competitors.

Research has been performed to examine the market structure of various sectors in the tourism industry, and these studies are critiqued in the following section.

2.1. Market structure study in the tourism industry

Applications of IO theory in the tourism industry have been rather scant and have mainly focused on empirical study under the structure-conduct-performance (SCP) paradigm. Furthermore, because the tourism industry is characterized as similar to “backyard capitalism” (Papatheodorou, 2004), with problems in market definitions and a lack of accessible data (Candelé & Figini, 2010; Davies, 1999), the few applications to the tourism sector have lagged far behind those in the manufacturing sector. Extant literature employing the SCP approach in the tourism industry addresses the travel agency or package tour industry (Davies & Downward, 2007; Gu, 2010; Zhang, Li, & Liang, 2007), hotel industry (Mazzeo, 2002; Pan, 2005; Tung, Lin, & Wang, 2010; Zhao, 2007), and tourist resort industry (Papatheodorou, 2003b, 2004). The main conclusions of these studies are summarized below.

2.1.1. Package tour industry

Since the 1980s, researchers have examined the nature of competition in the package tour industry (Aguiló, Alegre, & Sard, 2003; Baum & Mudami, 1994; Davies & Downward, 2001; Evans & Stabler, 1995; Gratton & Richards, 1997; Sheldon, 1986; Taylor, 1996). However, conclusions of the structural characteristics of this market seem very controversial. Some (e.g., Baum & Mudami, 1994; Evans & Stabler, 1995) suggest the industry is oligopolistic, while others (e.g., Gratton & Richards, 1997; Sheldon, 1986; Taylor, 1996) argue that the market is competitive or contestable. In an attempt to resolve these competing arguments, Davies and Downward (2007) concluded that neither could be easily overruled and that the package tour industry seems to have two different segments: one consisting of large and leading firms and the other containing many small, highly competitive firms. Oligopoly behavior appears to be present in both the large company segment and the small enterprises (Davies & Downward, 2007). Compared with Europe and the United States, the concentration of China's travel agency industry is still very low, but the industry is going through a process of increasing market concentration (Tung et al., 2010; Zhang, 2006).

2.1.2. Tourist hotel industry

Relative to the package tour industry, the boundaries of the hotel industry are easier to define and more data are accessible (Davies, 1999), so relatively more investigations of the market structure of the hotel industry have been conducted. Davies (1999) and Pan (2005) explored the relationship between market structure and the performance of the hotel industry in the United Kingdom and Taiwan, respectively. Davies (1999) identified a negative relationship between market share and profitability in the UK hotel sector, whereas Pan (2005) found a positive relationship between market concentration and profitability in the Taiwanese international hotel industry. Mazzeo (2002) measured the effects of product differentiation on competition among motel oligopolies in the US using direct measures of oligopolists’ product characteristics and prices and found that product differentiation significantly reduced competition. To estimate causality of structure, conduct, and performance among Taiwan international tourist hotels, Tung et al. (2010) found a two-way pattern of cause and effect.
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