Coupling Coordination of Internet Development, Technology Innovation and Star Hotel Efficiency

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ABSTRACT

The research on the relationship between the three systems of internet development, technology innovation and star hotel efficiency for the development of the regional hotel industry provides a reference for this article. Based on the coupled coordination model, the authors analyze the evolutionary relationship between the three systems using the spatiotemporal dimension. The study draws the following conclusions. (1) In the 31 Chinese provinces examined, internet development and technological innovation have a high relevance, and there is a trend in these systems of decline from east to west in the three-ladder distribution. (2) The development trend of star hotel efficiency first rose and then fell, which shows its susceptibility to national policy. The spatial pattern reflects high efficiency in eastern and western China and low efficiency in the central area. (3) Among these characteristics, the comprehensive efficiency and pure technical efficiency of the star hotels in the eastern region are the highest, while the scale efficiency is highest in the western region. (4) The degree of coupled coordination maintains stability overall despite fluctuations, with the overall direction being toward healthy development. The system coupling coordinated development is complex and diverse, and the coupled coordination span is large, with the coupled coordination degree decreasing gradually from east to west in spatial distribution.

KEYWORDS

China, Coupling Coordination, Hotel Efficiency, Internet, Technology Innovation

INTRODUCTION

Technological innovation and Internet development has had a revolutionary impact on the development of the hotel industry. With the development of smart tourism (Li, Hu, Huang, & Duan, 2017), the Internet and technological innovation in the hotel industry have begun to play a more important role. The Internet and other emerging information technologies widely used in the hospitality industry for marketing, booking, and evaluating customer complaints and recommendations have greatly contributed to the development of the industry as a whole (Xisan, 2009). At present, information technology in the hospitality industry is mainly applied to areas such as website design and quality assurance (Seyhmus, & Yakup, 2006; Rob & Catherine, 2006), online booking (Woo & Dong, 2004; Sherrie, Hubert & Thomas, 2001), e-commerce and procurement (Silvia, Abella, Sophie, & Angel, 2004; Tanvi, Clark, & Wesley, 2007; Chih, Schwartz & Patrick, 2010), network marketing and branding (Siu & Alastair, 2004; Hashim, 2007), etc.

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The rapid development of the Internet has had a profound impact on human production and life (Rathore, Anand, Ahmad, & Jeon, 2017; Salahuddin & Gow, 2016; Gulbahar & Yildirim, 2015). Investment in new technology has brought about high productivity and rapid economic growth (Adak, 2015). The use of Internet technology has become one of the most important global strategies (Miltiadis, Vijay, & Ernesto, 2017). At present, the Internet has been completely integrated into the hotel industry. Since 1980, information and communication technology has changed the hotel industry’s strategic decisions and actual business. Internet technology is a powerful tool for communication and marketing and can help the hotel achieve online information sharing and online transactions (Wang, Law, & Hung, 2014). From customer accommodation booking, catering reservations, and network reviews to hotel internal management, most functions are inseparable from the Internet technology. The Internet has made significant changes to the hotel business model. The role of technological innovation in the hotel industry centers around reducing operating costs, increasing profitability, improving customer service quality, improving operational efficiency, improving distribution capacity and interacting with customers (Law, Leung, Au, & Lee, 2013). As a result, information technology has had a great impact on hotel productivity, marketing methods and organizational performance improvements (Enz, 2012). Therefore, how can the hotel industry better utilize the role of the Internet and new technologies to improve the efficiency of star hotels to achieve sustained and healthy growth? Solving this important issue has become a concern of both the hotel industry and local government efforts.

At present, some scholars have conducted relevant research. Wei et al (2001) researched the impact of the Internet on hotel market segmentation, organizational buying behavior, and hotel operations. Noone and Mattila (2009) studied the relationship between hotel revenue management and the Internet and how it affects customer reservation intention. Sorzabal, Gerrikagoitia, & Manzanera (2013) researched hotel Internet distribution systems, an important tool in the hotel industry. Yee and Lee (2016) performed deep research into the application of self-service technology (SST) in the hospitality industry. Car, Pilepic, and Simunic (2014) believe that mobile technology and mobile clients have a great influence on the supply chains within the hospitality industry, which leads to the improvements in productivity and satisfaction, while saving enterprise costs. Sunny, Woo, and Seungwhan (2005) believe that the application of information technology can improve hotel efficiency so that employees have more time to provide additional and better services to guests. Xiong (2012) studied the impact of information technology on hotel performance through multivariate regression analysis.

Sheng and Zhong (2010) believes that Internet technology has positive effects on hotel development, hotel products and hotel marketing, but there is no quantitative study to support this assertion. Therefore, this paper quantitatively studies the relationship between Internet development, technological innovation and star hotel efficiency. Firstly, this paper constructs an evaluation model and index system for Internet development, technological innovation and star hotel efficiency using coupling coordination. This quantitative study of their interactive relationship, taking 31 provincial areas in China (hereinafter referred to as provinces) as the research object, uses the entropy weighting method to evaluate the comprehensive development level of Internet development and technological innovation in these 31 provinces and uses the DEA analysis method to measure the efficiency of star hotels. Secondly, based on the coupled coordination model, we analyze the evolutionary relationship between the three systems in China using the spatiotemporal dimension.

**COUPLING MECHANISM ANALYSIS**

The coupling coordination degree is the degree of coordination between two or more systems or elements. It is a coordinated development based on system coupling, which indicates the degree of benign coupling between systems, which reflects the coordination between systems. An in-depth understanding of the mechanism of interaction between systems allows researchers to solve for the coordinated development of the primary problem (Figure 1).
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