

Influence of social media on operational efficiency of national scenic spots in china based on three-stage DEA model



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ABSTRACT

An increasing number of national scenic spots around the world use social media, such as micro-blogs and Twitter, to promote their popularity and improve their operational performance. National scenic spots may adopt different social media behaviors that lead to unbalanced operational performance. This study takes the perspective of social media adoption in national scenic spots by looking into the influence of social media adoption behaviors on operational performance based on the three-stage data envelopment analysis model. We found that most of the national scenic spots in China have low pure technical efficiency and that operational performance, including social media popularity and operational performance, is significantly determined by various social media adoption behaviors.

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1. Introduction

Nowadays, social media serves an important role in our lives, as it influences the manner through which we communicate with each other (Qualman, 2012) and makes news reporting be presented in a faster, trendier and digital manner (Hermida, 2010). As a result, an increasing number of companies are changing their communication strategies to engage more consumers in social media communication to enhance brand loyalty and attract more potential consumers (Culnan, McHugh, & Zubillaga, 2010; Casaló, Flavián, & Guinalíu, 2010; Sinderen & Almeida, 2011; Hong & Cho, 2011; Laroche, Habibi, & Richard, 2013). Earlier research on social media has shown that consumers' intensity engagement is positively related to corporate reputation (Hollebeek, 2011; Dijkmans, Kerkhof, & Beukeboom, 2015).

As managers become more comfortable with social media and treat it as their integrated marketing communication, they naturally become distracted to the issue of effective social media measurement (Hoffman & Fodor, 2010) while different industries gain significantly different benefits from the use of social media (Bughin, Chui, & Miller, 2009). Scholars have also addressed this issue depending on samples from specific industries, such as the hotel industry (Oliveira, Pedro, & Marques, 2013) and the manufacturing industry (Fernández-Menéndez, López-Sánchez, Rodríguez-Duarte, & Sandulli, 2009). Tourism is an important part

of online commerce, which has deeply changed the industry structure (Milano, Baggio, & Piattelli, 2011) and is anticipated to be the new market dynamics (Werthner & Klein, 1999; Werthner & Ricci, 2004). As the tourism sector is a key sector for micro-blogs in China, it is chosen as the sample source in this study.

In previous research, technological resources such as Information and Communication Technology (ICT) have been analyzed by quantifying efficiency (Sigala, 2003; Serrano-Cinca, Fuertes-Callén, & Mar-Molinero, 2005; Fernández-Menéndez et al., 2009). Social media as a kind of new technical resource has attracted scholars' attention on its efficiency measurement (Hoffman & Fodor, 2010), but a dearth exists in its related empirical studies. This study aims to analyze the operational performance of national scenic spots in China by adding social media indicators based on three-stage data envelopment analysis (DEA) model. Moreover, this study intends to excavate and determine the significant corporate social media adoption behaviors that can significantly promote returns of social media investment and deepen the theories about the evaluation of operational performance.

This paper begins with a literature review about the connection between social media and operational performance from the perspective of the theory of resource-based view of the firm and the micro-blog adoption behaviors based on some classic information theories. The methodology and data are presented in Section 3. Section 4 describes the data analysis and the DEA results in three stages. Section 5 presents the discussion on different aspects. Section 6 is the conclusion includes managerial implications, theoretical and empirical contributions and limitations.

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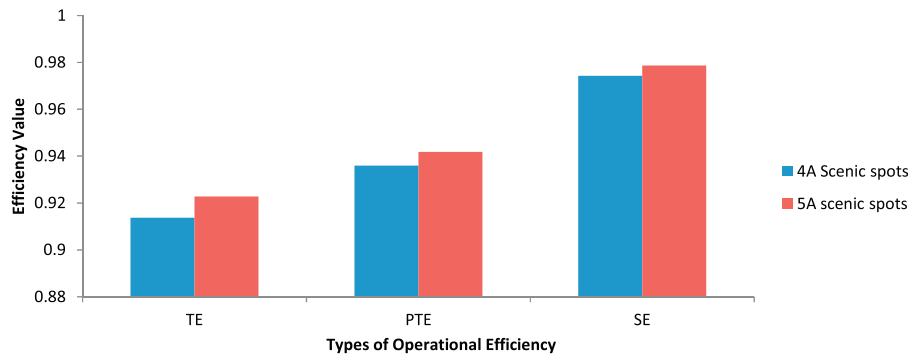


Fig. 1. Efficiency comparison between 4A and 5A scenic spots.

2. Literature review

2.1. Social media and operational performance: through RBV lens

According to the literature on strategic management, the resource-based view of a firm indicates that firms should acquire unique corporate resources to gain sustainable competitive advantage (Barney, 1991) through the VRIO framework, a resource model that consists of value, rarity inimitability and organization (Terziovski, 2010). Resources include both tangible and intangible assets (Grant, 1991) that can improve the productivity and the quality of service (Rungtusanatham, Salvador, Forza, & Choi, 2003). Tangible resources are composed of financial capital and various kinds of physical assets (e.g., plant, equipment, or stocks of raw materials), whereas intangible resources are assets such as reputation, brand image, and so on (Bharadwaj, 2000). To explore how these resources can create and sustain competitive advantages, scholars have argued that the concept of organizational capacity is the same as core competence (Hamel & Prahalad, 1990; Grant, 1991). Therefore capabilities refer to a firm's capacity to deploy resources, and they are tangible or intangible processes based on information (Amit & Schoemaker, 2012). Both information collection and processing practices are capabilities that facilitate a firm to acquire more knowledge assets (Grant & Badern-Fuller, 1995; Galunic & Rodan, 1997).

The conceptual framework for augmenting the analysis of social media effects on organizational performance is the resource-based view that combines the operational performance of organizations with resources. Many studies have addressed this aspect in financial resources, but other resources such as human resources (Durand & Vargas, 2003) or technological resources (Okazaki, 2006; Emrouznejad, Cabanda, & Gholami, 2010) should be incorporated into the analysis of strategic performance. In previous research, information technology (IT) was considered as an important investment in business value (Markus & Soh, 1993), and the effects of

IT on intermediate business processes were examined (Mooney, Gurbaxani, & Kraemer, 1996). Moreover, the association between IT capacity and business performance was strictly examined from the theoretical and empirical perspectives (Bharadwaj, 2000; McAfee, 2002).

Social media is considered a technology that has greatly developed in recent years, is treated as an interactive technological resource, and is regarded as a specific service and application with ICT (Martínez-Núñez & Pérez-Aguilar, 2014). How to quantify the return generated by investing in social media has attracted much attention and consideration from managers and scholars (Hoffman & Fodor, 2010). Hoffman and Fodor (2010) proposed that in calculating social media return of investment, managers should start by identifying what marketing objectives such a blog may satisfy (e.g., brand engagement), what interests the consumers (e.g., new products), and the approaches customers engage in (e.g., comment) instead of measuring social media investments in dollars (e.g., sales, cost reduction and increase in market share).

Martínez-Núñez and Pérez-Aguilar (2014) analyzed the productive efficiency of the companies that make up the telecommunications sector in Spain, and proved that adding 2.0 technology indicators into the evaluation could improve the efficiency through a super-efficiency analysis. In this study, the productive efficiency was measured by the indicators of sales and profits while the efficiency of social media investment was measured by number of followers of the profile. Such evaluation process was called the strategic performance assessment in that study (Martínez-Núñez & Pérez-Aguilar, 2014). Although the concept of strategic performance is comprehensive and contained various contents, including all-round operational activities (Atkinson, Waterhouse, & Wells, 1997), social media marketing is regarded as a corporate operational effort. Therefore, in this study, productive efficiency and social media efficiency are called by the joint term operational performance.

Followers of the micro-blogs tend to be loyal and committed to the organization, and they easily accept the information released

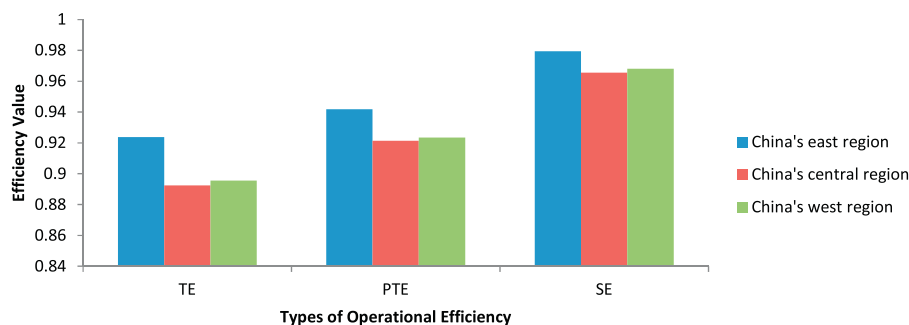


Fig. 2. Efficiency comparison among different regions.

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