A model that connects information technology and hotel performance

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**HIGHLIGHTS**
- We review global proposals about IT influence on hotel organizational performance.
- We review particular IT paths toward different hotel organizational performance facets.
- We present a comprehensive model that details the routes that IT applications follow in order to improve hotel performance.

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**ABSTRACT**

Despite vast investments in IT, there is scant research and empirical data that connects, in depth, IT with firm performance in the hospitality industry. However, the literature does show partial evidence and examples of particular technologies. After an extensive literature review, we posit four global paths through which IT can impact hotel performance and, for each one, the precise mechanisms that cause these influences. These four proposals are further developed and refined using in-depth interviews with a group of 30 managers of different areas from several hotels. A final comprehensive model that shows the specific routes that IT can follow in order to improve hotel organizational performance is presented. This model can be taken as a frame of reference by academics and can also be used by both practitioners and IT producers to assess particular IT options.

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1. Introduction

Information technologies (IT) have been recognized as one of the greatest forces causing change in the hotel industry (Law, Leung, Au, & Lee, 2013). Many hospitality firms have turned to IT as a way to cope with an environment characterized by globalization, competition, high client turnover, and rising guest expectations. IT investments are considerable in the hospitality industry, but those investments do not always guarantee suitable returns; therefore, research that clarifies in detail how IT can improve organizational performance is required (Cohen & Olsen, 2013).

Although there is a lack of a comprehensive model of the relationship between organizational performance and IT investments in the hospitality industry, there is evidence from the academic and professional literature about how specific IT may impact some drivers of the relationship. After a literature review, we pose a general model that includes four global paths through which IT can influence hotel performance. This model is subsequently analyzed with 30 managers of different areas in five hotels through a qualitative approach using in-depth interviews in order to find support for the different roles that IT should adopt to impact hotel organizational performance.

2. IT and hotel firm performance

IT has transformed tourism globally. Its potential to shape customer service and hospitality firm performance has been widely recognized (Buhalis & Law, 2008; Ip, Leung, & Law, 2011). Nevertheless, hospitality firms do not always obtain a return from their IT investments (Brown & Stange, 2002). In particular, the extant research has provided little empirical evidence about how IT can be used in order to produce customer service outcomes and how it contributes to the performance of hospitality firms (Cohen & Olsen, 2013).
However, the literature provides both theoretical arguments and empirical evidence in order to propose a model that describes IT influence on hotel performance. We will describe the more global and comprehensive approaches to the issue, and we will examine in detail each of the options presented in these general views about the influence of IT. Nevertheless, we are attempting to describe how IT can impact hotels’ organizational performance; therefore, this last construct must be explained first.

2.1. Organizational performance in hotels

Organizational performance is a complex and multidimensional construct (Avci, Madanoglu, & Okumus, 2011). Economic results represent the final objective of most companies (Chandler, DeTienne, McElvie, & Mumford, 2011), and so the economic dimension stands out. In hospitality, Cohen and Olsen (2013) used profitability, sales growth, and revenue per available room. On the other hand, the non-financial performance facet focuses on a firm’s long-term success, with measures such as customer satisfaction and productivity (Van Veen-Dirks & Wijn, 2002). The sequence from non-economic performance to economic performance is assumed by different authors. In particular, it has been considered that client-related performance and productivity lead to economic performance (Cohen & Olsen, 2013; Combs, Crook, & Shook, 2005; Heskett & Schlesinger, 1994). Therefore, any attempt to describe how IT can improve hotel performance should consider at least the client, productivity, and economic dimensions of organizational performance. This is consistent with the more recent research about hotel performance measurement (Sainaghi, 2010).

2.2. Global proposals about IT impact on organizational performance

Bannister and Remenyi (2000) state that the process through which IT improves firm results is more sophisticated than delivering services at lower costs. It should be connected with other non-IT company factors like strategy, clients, and services. Based on the analysis of different global proposals about how IT can improve hotel organizational performance (Chathoth, 2007; Law & Jogaratnam, 2005; Law et al., 2013; Leung & Law, 2005; Piccoli, 2008; Siguaw, Enz, & Namasivayam, 2000; Tavitiyaman, Qiu Zhang, & Qu, 2012), we posit that the general process involves acting upon the following organizational performance drivers: operational productivity, employee productivity, customer service, and commercialization (Fig. 1). In the next sections, we describe how IT can be used in each of these global options.

2.3. Operational productivity

Productivity can be defined as the relationship of output to input (Tangen, 2005). In hotels, there are both relevant outputs (such as the number of clients and revenue), and relevant inputs (such as employees, raw materials, and energy). We will consider employee productivity separately because employees are a very important resource for hotels. Among the other resources that are relevant in terms of costs, energy and food stand out (Pavlatos & Paggios, 2007; Pérez-Lombard, Ortiz, & Pout, 2008). Furthermore, apart from the cost interest, the environmental impact and energy consumption also contribute to hotel social responsibility (Holcomb, Upchurch, & Okumus, 2007), and they involve international recognition (e.g., EMAS awards). Therefore, both types of non-personnel activities should be optimized through IT in order to, on the one hand, reduce costs and, on the other hand, improve the hotel organizational image associated with hotel social responsibility: green image (Fig. 2). Examples of interesting IT options in relation to these aims are kitchen control systems and energy management systems, respectively (Doukas, Pattitzielas, Iatropoulos, & Psarras, 2007).

2.4. Employee productivity

Hotel firms are labor intensive and task-oriented in their service operation and delivery. Evidence suggests that hospitality firms can succeed in using technological resources to improve staff productivity. One way of increasing personnel productivity involves reducing staff costs without affecting performance outputs. In this sense, staff productivity consequences are the same as those of operational productivity: higher profitability. Thus, guest registration IT options like kiosks and online check-in allow firms to check in guests faster with fewer staff (Kim, Kim, Park, Lee, & Jee, 2012).

Besides reducing staff costs, employee productivity can be achieved through higher output while containing personnel costs. In this sense, since IT releases employees from manual labor, they have the opportunity to focus on service and meeting clients’ particular needs and wants (Chathoth, 2007). This staff productivity facet can influence client satisfaction through better customer service which, as has been explained, is considered as an antecedent of firm incomes. Fig. 3 illustrates employee productivity and IT possibilities.
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