



# Linking operations, marketing and environmental capabilities and diversification to hotel performance: A data envelopment analysis approach



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## ABSTRACT

This study examines the impacts of marketing capability, operations capability, environmental capability and diversification strategy on performance of hotel industry in the UK. We conceptualize these impacts by drawing on the resource-based-view of a firm as the theoretical underpinning. We use the financial archival data and information obtained from websites. We use content analysis, regression analysis and Data Envelopment Analysis (DEA). Our results show that operations capability and environmental capability have significant positive effects on performance, marketing capability has a significant negative impact but diversification strategy does not impact on performance. Additionally, there is no evidence of the moderating effects of efficiency on these impacts. Our study suggests that hotel industry in the UK ought to focus on developing operations and environmental capabilities especially by exploiting the synergies between them but reduce excessive reliance on marketing. This paper makes two important contributions to the literature. First, it applies a framework linking the three capabilities (operations, marketing and environment) and diversification to the specific case of the hotel industry. Second, unlike similar previous studies, ours is the first to incorporate environmental capabilities in the analysis.

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## 1. Introduction

The hotel industry is fast developing and it is very competitive (Sargeant and Mohamad, 1999). This sector is also well researched in the academic literature; there are studies that explored the links among various aspects of performance, such as market orientation, strategic planning, environmental management and financial measurements in the UK hotel industry (Sainaghi, 2010).

Capabilities of a firm to efficiently organize its functions (e.g., marketing, operations, etc.) in general have positive impact on its performance. A number of studies have investigated how capabilities have affected a firm's performance. Some of the studies have employed the resource-based-view (RBV) of a firm as their theoretical base. Efficient operations capability can create competitive advantage (Tan et al., 2007; Ramanathan and Gunasekaran, 2014). Many researchers claim that marketing capability has significant positive effect on firms' financial performance (Kumar

et al., 1998; Narver and Slater, 1990). Additionally, firms use superior environmental capability management to comply with the corporate social responsibility commitment, build reputation for natural environmental services, and earn profit on performance (Judge and Douglas, 1998; Klassen and McLaughlin, 1996). Furthermore, service diversification has two potential impacts on a company's overall performance, positive (Bettis, 1981; Chatterjee and Wernerfelt, 1991) or negative (Chakrabarti et al., 2007). Nath et al. (2010) measure the impacts of functional capabilities (including marketing capability and operations capability) and diversification strategy on financial performance for the UK based logistics industry.

Though there are several studies that explored the impacts of capabilities on a firm's performance in general, unfortunately, there is no study that attempted a similar investigation for the specific case of the hotel industry, especially in the UK. Our study aims to fill this gap by drawing on the RBV theory. Given the growing importance of the tourism and the hospitality industry in the global economy, such a study will provide useful insights to develop hotel business strategies. Our study not only adapts the framework (linking operations and marketing capabilities, and

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diversification) suggested in previous studies, but also extends the framework by adding environmental capability in the analysis for the UK hotel industry. In line with the theme of this special issue, we use secondary data for the analysis.

Thus, the objective of this paper is to investigate the impacts of marketing capability, operations capability, environmental capability and service diversification on hotel financial performance in the UK. We further study whether hotels that are more efficient in utilizing their resources are able to register better links between capabilities and performance. Relevant data for the analysis have been collected using financial databases and using content analysis of annual reports/ corporate social responsibility reports/web pages of hotels. The capabilities are assessed using an efficiency measure of Data Envelopment Analysis (DEA). The impacts and the moderating role of efficiency are investigated using regression analysis.

We believe that our paper makes two important contributions to the literature. First, it applies a framework linking the three capabilities (operations, marketing and environment) and diversification to the specific case of the hotel industry. Second, unlike similar previous studies, ours is the first to incorporate environmental capabilities in the analysis.

The rest of the paper is organized as follows: In [Section 2](#) the relevant literature is described and research hypothesis are developed. The research methods, data and measurements are explained in [Section 3](#). Results and data analysis are discussed in [Section 4](#). [Section 5](#) summarizes and discusses the results. Conclusions, limitations and further research opportunities are detailed in the final section.

## 2. Literature review and hypothesis development

In this section, we first provide a synopsis of the resource-based view (RBV) theory linking resources, capabilities and their impacts on firm performance. We then discuss relevant literature specific to marketing capabilities, operational capabilities, environmental capabilities, and diversification strategy, and develop our research hypothesis based on the literature review.

### 2.1. The Resource-Based-View (RBV) of a firm

The Resource-Based-View (RBV) has been used widely by many theorists in the development and deployment of resources (Amit and Schoemaker, 1993; Barney and Zajac, 1994; Kraaijenbrink et al., 2010; Lei et al., 1996). Wernerfelt (1984) has first proposed the RBV of a firm and considered the firm as a bundle of resources and capabilities. A resource is composed of tangible and intangible components. For example, equipment is tangible component and technology knowhow is intangible component (Amit and Schoemaker, 1993). The resources, such as competencies, with potential to create value can be considered as a source of competitive advantage. Capabilities are the abilities of a firm to be able to use resources to achieve a desired outcome. Resources and capabilities should not only be valuable, rare, inimitable, and non-substitutable (VRIN), but also enable the value to be created (Barney, 1991).

A very useful feature of the RBV is that it helps explain why some firms perform better than others by explicitly looking at the internal resources and capabilities as sources of sustainable competitive advantage (Kraaijenbrink et al., 2010). It explains that the way a firm uses its available resources, uses its existing capabilities to the best level possible, generate new knowledge that cannot be easily imitated, create immobility of competitive capability-producing resources, and bring inimitability to its resource-capability framework (Kraaijenbrink et al., 2010; Song et al., 2007). In this paper, we develop our conceptual framework and hypotheses

based on the links between resource-capabilities (operations, marketing and environmental) and financial performance of a firm, as suggested by the RBV.

Given the interesting insights obtained using RBV, this theory has been applied to investigate firms' performance (e.g., Dutta et al., 1999), and the research reveals that capabilities affect the firm performance significantly. Dutta et al. (1999) have described the capability of a firm as ability to deploy available resources (inputs) to achieve desired objectives (outputs). RBV has also been used in the literature to show how a firm can diversify by expanding the resources into new product markets or new geographic locations (Fang et al., 2007). Hart (1995) has related a firm's business with its natural environment to achieve competitive advantage to the firm. It is predicted that the natural resources will be limited in the future, thus the optimal environmental management can form a sustainable competitive advantage for a firm (Greenley and Foxal, 1997). Finally, there is a general view in the literature (Ramanathan, 2010), mainly based on the RBV theory, that firms' efficiency acts as a moderator of the impacts of capabilities on performance; firms that are efficient in utilizing their available resources will be able to register better links between capabilities and performance.

### 2.2. Capabilities and relationship with performance

In this paper, using RBV as the theoretical backdrop, we explore how marketing capability, operations capability, environmental capability and diversification strategy influence hotel performance, and also explore the moderating role of efficiency on these relationships. The conceptual framework governing our study is sketched in [Fig. 1](#). The relationships shown in the figure in the form of hypotheses H1a–H4a and H1b–H4b will be discussed in the next few sections.

#### 2.2.1. Operations capability

A firm can obtain competitive advantage by using its operations capabilities (such as material flow process, utilization of asset, and related professional knowledge) efficiently, (Tan et al., 2007). An improved operations capability helps a firm to improve its output by using its production capabilities, technology, and flow of materials (Hayes et al., 1988) without adversely affecting cost of operations. Thus a firm with superior operations capability can increase its efficiency and gain competitive advantage (Day, 1994).

Efficient operations management can help hotels improve service quality and performance. Krasnikov and Jayachandran (2008) have found that operations capability, along with marketing and research and development (R&D) capabilities, impact on a company's performance positively. Feng et al. (2009) have investigated the relationships between resource capabilities and performance and have found that operations resources and capabilities had positive impact on a company's performance. Therefore, we hypothesize that:

**H<sub>1a</sub>.** Operations capabilities have positive impact on hotel financial performance.

Operations capabilities might have a significant impact on corporation's performance because of different rates of adaptation of capabilities (Krasnikov and Jayachandran, 2008). Some previous studies support that operations capabilities have varied influence on financial performance depending on other characteristics of firms such as efficiency (Vickery et al., 1993; Ortega and Villaverde, 2008; Song et al., 2007, 2005). The hotels with proactive operations have better performance than those with conservative operations. The financial performance is better for hotels with more innovative and proactive operations capabilities (Jogaratham and

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