THE EFFECT OF REVENUE MANAGEMENT ON PERFORMANCE: CHARACTERISTICS OF EXISTING RESEARCH VIA CONTENT ANALYSIS

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Abstract

Revenue management is selling the right product, with the right price, at the right time, to the right customer as defined in literature. Many companies have invested in revenue management systems with the expectation of revenue increases. Although there are firms that have realised a large proportion of this potential revenue gain, many others have not made the most effective use of their revenue management systems. In fact, some companies use these systems in ways that might reduce their revenues. The problem is that the understanding of the relationship between these initiatives and firm performance is incomplete. For this purpose, this study adopted a systematic process of reviewing the literature using content analysis as the main technique. The process involved searching for existing articles that are relevant to this study with no restriction on the date of the issue, evaluating and selecting the suitable ones and analysing and synthesizing their findings. The summary of the results of the existing studies will help to understand the influence of revenue management on the financial performance of companies in various industries.

Key words: revenue management, yield management, performance, revenues

JEL Code: L11, L60

Introduction

Revenue management (sometimes also called yield management) is an integrated and systematic approach to revenue maximization via manipulating the rates offered to the customers considering forecasted demand and supply patterns (Sanchez and Satir, 2005).

The continued success of revenue management hinges upon the ability to link organizational performance to the pricing and capacity decisions of these systems (Blair and Anderson, 2002). The system developers (vendors), the organizations that use it, as well as the analysts who implement the system recommendations, all require a clear understanding of system operations and their impact on organizational performance.

How do I measure weather revenue management is earning me money? This is a question often asked by vendors and professionals within the revenue management industry. Estimating the impact of this system on firm's performance is crucial for assessing the effectiveness of the managerial and organizational actions needed to develop revenue management program (Ortega, 2016). However, the specific contribution of revenue management to performance is difficult to measure because firm's performance may be driven by external shocks beyond the control of the revenue managers. It is even more difficult regarding the fact that moving from standard pricing to pricing in the sense of revenue management is not usually a single drastic transition and the outcomes of using revenue management system may take a long time to manifest.

1 Literature review

Firms use various techniques to manage demand through revenue management. A company implementing this concept must first segment its customers through different willingness to pay and different preferences over time. Market segmentation allows companies to charge the groups of customers different prices. To implement such a pricing strategy, it is necessary to forecast precisely. Adequate capacity is then allocated to the segments, and the firm must decide whether to sell the existing capacity immediately to the lower value customer or to retain this capacity for more profitable customers who may or may not make future purchases. This whole process enables firms to learn about customer behavior and to adjust their services and prices to improve their revenues. So, it can be assumed that companies with a higher ability of revenue management will achieve higher performance (Queenan et al., 2009).

Many authors report an increase in revenues or profit caused by yield/revenue management techniques and activities (Rannou and Melli, 2003; Sanchez and Satir, 2005; Li et al., 2009; Foggia and Lazzarotti, 2014; Willie et al., 2015). But some authors point to barriers that prevent companies from gaining the full benefits of revenue management. According to Belobaba (2002), many companies have invested in this program with the expectation of a possible increase in revenue of 5% or more, and although there are companies that have managed to increase revenue, others have not used revenue management practices most effectively. In fact, many companies use these systems in a way that can reduce their revenue. The success of revenue management, or the fact that its recommendations will lead to improved financial results, depends on the accurate data and knowledge of its users. So, the problem is not in the systems themselves. The problem is their complexity or rather misunderstanding of forecasting and optimization models by users responsible for decision-making in the field of revenue management. While system developers are trying to incorporate increasingly sophisticated modeling into their products, those who are responsible for translating model recommendations into real business decisions are in many cases unable to work effectively with these systems. Effective revenue management thus requires more than a one-time investment in technology. It requires regular investment in the administration and support of the system, and in the education and training of its users.

For these systems, which predict demand and optimize the price and/or availability of products, to be effective and make the right recommendations, they must accurately model the specific business environment in which the company operates (Skugge, 2004). If the models are inaccurate, the company will not achieve the expected sales growth or even reduce them. Revenue management also affects various departments of the organization, such as sales, marketing, finance, and IT, and unless their activities and efforts in this area are coordinated, the benefits of these techniques will not reach their maximum potential.

So, it can be said that some companies received only a small share of the possible benefits of introducing revenue management and in several cases these systems even reduced the company's profitability, while the failure was not caused by inappropriate concepts; rather, it resulted from their poor implementation, whether it was the setup of the system itself or the application of its tools (Lieberman, 1991). According to Lieberman (1993), the idea that revenue management programs automatically increase revenue is even one of the myths about this technique.

An argument can be made whether these systems deliver benefits at all (Jain and Bowman, 2005). The sales and marketing department can claim that the new advertising campaigns brought in greater volume. The customer services department may claim that higher customer satisfaction generated increased revenues. The management team may point to the fact that the company was operating in a much-improved local economic environment. Considering all these factors one could even ask whether it is revenue management which delivers benefits. It means that measuring the impact of this technique is essential to attribute correctly which revenue increases are a result of the system or of other factors.

2 Methodology

The research question of this paper is: What are the characteristics of existing research of the effect of revenue management on performance? To provide a comprehensive answer, this study adopted a systematic process of reviewing the literature using content analysis as the main technique, based on the approach of Guillet and Mohammed (2015). The process involved searching for existing articles that are relevant to this study with no restriction on the date of the issue, evaluating and selecting the suitable ones and analysing their findings to characterize this research area. To locate the relevant articles for this study, keywords search was conducted in online database ProQuest Central. Main keywords "revenue management" and "yield management" (original term used in airline industry) were combined with perform*, measur*, monitor*, metric*, effect* and impact* and the abstracts and titles of the documents were searched.

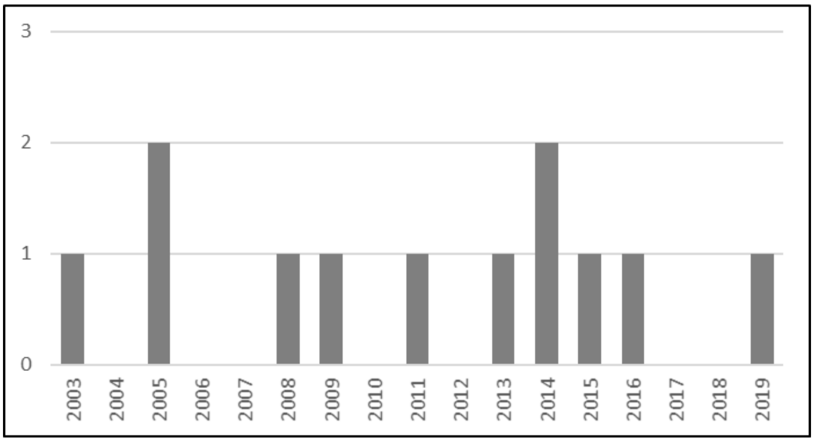
Then more precise criteria based on three conditions were applied to select the final list of articles. First, the document needed to be a full-length paper. Furthermore, the focus was on academic journals. The identified articles included a broad range of topics, some of which were outside the purview of this study. So, the third criterion for the selection of the papers was that the article had to be related to revenue management and the focus of the paper had to be empirical study analysing the effect of this concept on performance. Often simulations are used to outline the impact of different methods of revenue management on revenue results, but the studies using simulations were not included in this study. The argument against simulations is that they do not consider all aspects, as they reflect a substantial simplification of the real world and can easily be perceived as biased (Westermann, 2015). The abstracts or the whole articles were read to select the final sample. It included 12 papers.

The content analysis of the selected studies began with reading of all the articles. In this process, each paper was analysed in greater detail according to the following thematic areas: year of publication, journal of publication, regional focus, sector, method, and the result regarding the effect of revenue management on performance.

3 Results

Figure 1 shows that analyses of the impact of revenue management on performance have appeared in the studied literature from the beginning of the 21st century, which makes them a relatively new topic. The number of identified articles also shows that this practice is not yet well established in the literature.

Fig. 1: Articles according to year of publication

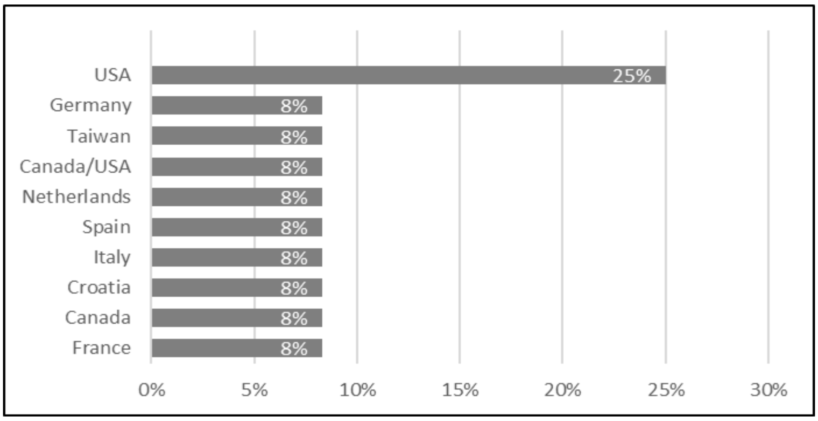


Source: Author

Regarding the journals in which the relevant articles have been published, according to the results Journal of Revenue and Pricing Management is fundamental on this topic (33 % of all relevant articles have been published in this journal), following by International Journal of Contemporary Hospitality Management (17 % of articles). Among other journals which have published articles about the effect of revenue management on performance belong Measuring Business excellence, Journal of Small Business Strategy, Journal of Tourism, Heritage & Services Marketing, Journal of Accounting, Finance & Management Strategy, European Journal of Information Systems and Journal of Business Studies Quarterly (8 % of articles).

The authorship analysis shows that most of the articles have been written by researchers from the United States, illustrating the concentration of experience and practical expertise in this country. 25 % of all articles come from authors affiliated in the USA.

Fig. 2: Articles according to regional focus



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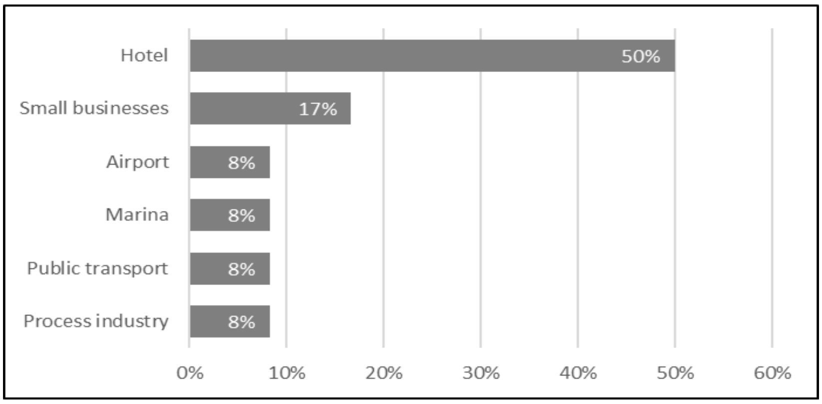
Most of the analysed empirical studies examine the effects of revenue management implementation on performance in hotel industry. It is a sector that adopted this method in its early days, inspired by its success in airline industry.

Fig. 3: Articles according to sector



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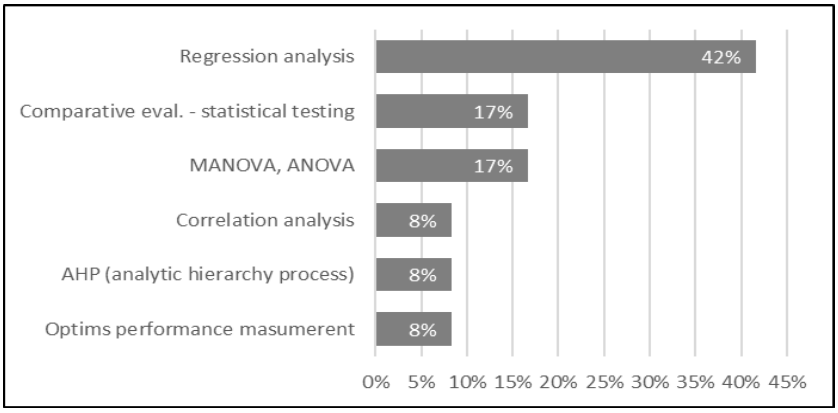
The method used most often to prove the influence of revenue management on the performance of companies is regression analysis, used in 42 % of cases, followed by methods of comparison by statistical testing (17 %) and ANOVA, MANOVA (17 %). 8 % of the studies used correlation analysis, AHP and the Optims performance measurement method. The Analytic Hierarchy Process (AHP) is a method used to measure pair wise comparisons according to the judgment of experts to derive priority scales. The method that Optims has developed allows the evaluation of revenue enhancement which is solely due to the impact of the revenue management program in place, and which is also independent on other influences, such as market conditions or distribution strategy (Rannou and Melli, 2003).

Fig. 4: Articles according to method



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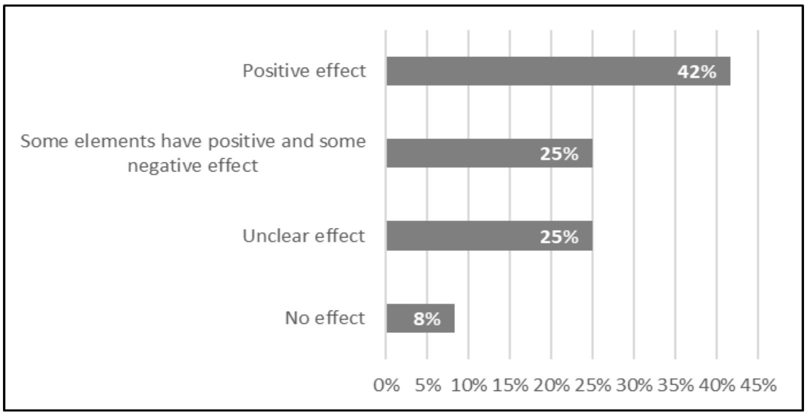
Regarding the effect of revenue management on firm performance, 42 % of the analyzed articles revealed that this effect is positive. 25 % of the articles study particular elements of revenue management with the conclusion that some of these elements have positive effect on performance while on the other hand there are elements which decrease performance. From the results of 25 % of the articles it cannot be concluded what is the exact effect of revenue management and 8 % of articles found out that revenue management does not affect performance.

Fig. 5: Articles according to effect of revenue management on performance



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Discussion

Airline industry is a pioneer sector of revenue management technique. So, the small number of studies from this field may be surprising as it could be expected to have the largest share. The reason behind the limited number of articles revealed by this literature review regarding airline industry can be found in the fact that most articles from this sector study the problem of testing revenue management performance by simulations or experiments on a set of live flights. With few assumptions, these models evaluate the performance of a new system against an incumbent system. These studies were not included in the analysis.

Even though restaurants are another typical revenue management sector, the literature review did not reveal any empirical study proving the effect of revenue management implementation on their performance. This throws up new challenges and opportunities for further research.

The expected research direction of author of this literature review relates to revenue management in FMCG sector with the aim to assess whether companies with higher level of revenue management achieve higher financial performance. These companies act in an environment with many challenges, such as constant price competition, rising promo pressure and trade discounts growth, and it can be hard for them to improve revenues. Therefore, they need to understand the link between these methods and the performance.

This study has its limitations regarding the process of identifying the relevant articles and their classification.

Conclusion

This study documents the areas of revenue management research regarding its effect on firm's performance using content analysis. The findings that can be noted from this study are that this area of research is relatively new topic and especially an American domain with hotel as prevailing sector, using mainly regression analysis. According to the results, it can be concluded that revenue management really is a technique that can improve performance.

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