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RESEARCH ARTICLE

The Relationship between the Technical Capabilities of Revenue Management and Firm Performance[1]

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Abstract

The study investigates the relationship between revenue management technical capabilities and firm performance, focusing on the hotel industry. It formulates hypotheses regarding the impact of market segmentation, demand forecasting, capacity allocation, and information technology on firm and marketing performance. The research employs a questionnaire-based data collection process to gather information from hotel managers, and the study's scales are adapted and validated to ensure reliability. The findings reveal significant relationships between market segmentation and financial performance, providing insights for hotels to optimize their operations and enhance their competitive edge. However, the study acknowledges limitations such as sample size constraints and the cross-sectional nature of the data, Proposing future research directions to overcome these limitations and investigate other factors affecting financial and marketing performance in the hotel sector.

Keywords: *Revenue Management, Firm Performance, Hotel Management, Technical Capabilities.*

Öz

Çalışma, otel sektörüne odaklanarak gelir yönetimi teknik yetenekleri ile firma performansı arasındaki ilişkiyi araştırmaktadır. Pazar segmentasyonu, talep tahmini, kapasite tahsisi ve bilgi teknolojisinin firma ve pazarlama performansı üzerindeki etkisine ilişkin hipotezler formüle etmektedir. Araştırma, otel yöneticilerinden bilgi toplamak için anket tabanlı bir veri toplama süreci kullanmaktadır ve güvenilirliği sağlamak için çalışmanın ölçekleri uyarlanmış ve doğrulanmıştır. Bulgular, pazar segmentasyonu ile finansal performans arasında önemli ilişkiler ortaya koyarak otellere operasyonlarını optimize etmeleri ve rekabet avantajlarını artırmaları için içgörüler sağlamaktadır. Ancak çalışma, örneklem büyüklüğü kısıtlamaları ve verilerin kesitsel yapısı gibi sınırlamaları kabul etmekte, bu sınırlamaların üstesinden gelmek ve otel sektöründe finansal ve pazarlama performansını etkileyen diğer faktörleri araştırmak için gelecekteki araştırma yönlerini önermektedir.

Anahtar Kelimeler: *Gelir Yönetimi, Firma Performansı, Otel Yönetimi, Teknik Yetenekler.*

[*] *This study was produced from the first author's doctoral thesis titled 'The mediating role of customer relations management in the impact of revenue management technical capabilities on business performance: An application in hotel businesses'.*

Introduction

In today's dynamic and highly competitive business environment, organizations are increasingly relying on sophisticated revenue management techniques to optimize their financial performance. Traditionally, revenue management focused on pricing strategies and inventory control. However, recent technological advancements have significantly transformed how firms approach these practices, introducing complex tools like big data analytics, artificial intelligence, and machine learning to manage revenues more effectively. These technical capabilities have reshaped the decision-making process, allowing businesses to respond to market fluctuations with agility and precision. In today's business world, the success of businesses depends on increasingly complex factors. One of them is the combination of revenue management technical capabilities and firm performance. The ability of businesses to effectively manage their revenue management processes not only increases short-term earnings as well as lays the foundation for long-term sustainable achievement. Nevertheless, the full extent of how revenue management technical abilities affect a company's performance remains unclear, particularly regarding the influence of qualified employees on financial outcomes.

El Haddad et al. (2008) stated that revenue management is an effective tool to allocate capacity to different categories in order to meet supply and demand and increase a firm's revenues by categorizing customers into different categories according to their purchasing intentions. Crystal (2007) describes revenue management technical capability as the set of technical procedures and practices that enable the application of RM strategies. When a company engages in revenue management, the initial action involves segmenting its customers and applying varied pricing strategies to each segment (Phillips, 2005). As a component of implementing diverse pricing strategies, the company needs to predict the demand for each customer segment and distribute capacity among these segments. This ensures an understanding of which customers to charge specific prices and at what timing (Talluri and Van Ryzin, 2004, p.1580). Due to the critical data needed for analysis in revenue management, it's essential to examine these tasks within the framework of an Information Technology (IT) system. These processes, crucial for revenue management, establish the foundation for the technical proficiency in revenue management.

Another aspect under investigation is firm performance, which refers to the qualitative and quantitative assessment of planned endeavours aimed at attaining organizational objectives and outcomes (Kalmuk and Acar, 2015, p.167). In the face of continually evolving market conditions, organizations must enhance their performance to uphold creativity and preserve their competitive edge. Global competition requires organizations to closely monitor their performance. Organizations are increasingly recognizing the significance of not just financial performance but also non-financial performance in shaping strategic decisions and advancement. Presently, many organizations employ both financial and non-financial performance metrics (Akman, 2003,p.74).

Despite the growing significance of these innovations, the relationship between the technical capabilities of revenue management and firm performance remains underexplored in academic research. While numerous studies have examined the individual effects of revenue management and technology on business outcomes, fewer have integrated these dimensions to assess how technical capabilities in revenue management influence firm success. In terms of reflecting the conditions in the tourism sector in Turkey, it is important to conduct the study in hotels in Turkey. On the other hand, it is expected to contribute to the studies in this field by analysing the revenue management technical capabilities of hotel businesses. Given these contributions, this study aims to provide a framework for understanding how revenue management technical capabilities affect firms' performance, while providing practical recommendations for business managers, researchers and industry experts.

The need for this study is particularly pressing as industries like hospitality increasingly rely on technical innovations to enhance revenue

management practices. With the rise of digital transformation and data-driven decision-making, firms that leverage sophisticated revenue management systems are expected to gain a competitive edge. However, without a deeper understanding of how these technical capabilities directly contribute to performance outcomes, firms may struggle to realize their full potential. Therefore, this research aims to provide valuable insights into the mechanisms through which technical capabilities in revenue management can drive firm performance, offering practical recommendations for businesses seeking to optimize their financial outcomes in the digital age

2. Conceptual Framework

2.1. Revenue Management

As per Kimes and Wirtz (2003, p.128), revenue management is characterized as employing information systems and pricing tactics to assign appropriate capacity to specific customers, ensuring optimal timing and pricing alignment. Revenue management's earliest and most well-known application is found in the airline sector, where the challenge lies in selling a predetermined number of seats before every flight. In the hotel industry, revenue management practices are normally implemented due to five conditions: limited capacity, market segmentation and pre-purchase of service, uncertain future demand, perishable products, and cost and pricing structure (Guadix et al, 2010, p.522). In recent times, more and more companies have come to appreciate the significance of revenue management in enhancing their sales and profitability (Wirtz et al., 2003, p.520). A survey of existing literature indicates that the majority of previous research on revenue management has concentrated on forecasting and optimization models. Since the starting point of revenue management is airline companies, this application area has attracted more attention than hotel businesses (Guadix et al, 2010, p.522). Recent bibliometric analysis reveals that RM research in tourism and hospitality has shifted towards consumer orientation, with dynamic pricing, machine learning, and consumer behavior emerging as dominant topics (Subying and Yoopetch, 2023).

Furthermore, the goal of revenue management is to optimize financial performance by establishing varying prices for identical offerings (Matsuoka, 2022, p.148). Nevertheless, these methodologies have the potential to disrupt the non-monetary aspects of managing customer relationships, such as the perception of value, customer satisfaction, and loyalty. Additionally, revenue management typically establishes elevated prices during periods characterized by high demand or congestion. Congestion may have adverse effects on service quality, leading to reduced perceived value, lower levels of customer satisfaction, and diminished customer loyalty (Guadix et al, 2010, p.522). Hence, revenue management can exert a dual negative influence on customer relationships: by simultaneously affecting objective pricing and occupancy levels, and by detrimentally impacting the non-monetary aspects of customer relationships (Matsuoka, 2022, 148).

2.2. Revenue Management Technical Capabilities

2.2.1. Market Segmentation

The first stage of a revenue management implementation is to study and understand the market. Then, market segmentation is the second part to execute an effective revenue management strategy. Market segmentation, as defined by Kotler et al. (2001, 245), involves categorizing a market into smaller buyer groups that have distinct needs, characteristics, or behaviors, which may require unique products or marketing strategies. The implementation of segmenting and targeting strategies can positively affect marketing performance, as better strategies lead to increased sales (Suyatno et al., 2023). For this reason, market segmentation will have a positive effect on firm performance. Accordingly, the first hypotheses of the study were developed as follows.

- **H_1:** Market Segmentation positively affects Firm Performance.
- **H_5:** Market Segmentation positively affects Marketing Performance.

2.2.2. Pricing

After segmenting customers, a company must establish prices for each group. Pricing is defined as the process of setting charges with the goal of maximizing revenue from the company's customers (Vorhies and Morgan, 2005, p.80). Revenue management enables firms to increase revenue by charging higher prices to certain customers compared to others (Monroe, 2003). Pricing, regardless of its complexity, is deemed a crucial component of revenue management (Preslan and Newmark, 2004), thus acknowledged as one of its technical capabilities. Also, pricing research in hospitality and tourism has experienced significant content enrichment, with growing interest in sharing economy accommodations and the interplay between pricing and electronic word-of-mouth (Han and Bai, 2022). In the study conducted by Töytäri, Keränen and Rajala (2017), it is stated that if pricing is managed based on customer value, the financial performance and profitability of companies increases. For this reason, pricing will have a positive effect on firm performance. Accordingly, the hypotheses of the study were developed as follows.

- **H_9** Pricing positively affects Firm Performance.
- **H_{10}:** Pricing positively affects Marketing Performance

2.2.3. Demand Forecasting

Following market analysis and segmentation, the subsequent step is demand forecasting, which serves as the cornerstone of all revenue management efforts. The accuracy of this forecast is paramount for the revenue management system's effectiveness. Inaccurate forecasting can result in subpar inventory management and decreased revenue. Organizations must possess comprehensive insights into historical demand patterns derived from market demand and be proficient in methods for projecting current demand to successfully implement a revenue management system. In numerous service industries, product demand exhibits one or multiple recurring patterns and trends (Gupta and Zeithaml, 2006, p.720). Further, Demand forecasting is the process of estimating the rate at which consumers will demand goods and services in determining future production levels. When looking at the types of forecasts, they are classified in terms of the time they cover as short-term forecasting, medium-term forecasting and long-term forecasting (Şahin ve Taşkesen, 2022). The study conducted by Zhang and Si (2022) examines the positive effects of demand forecasts on operational efficiency and firm performance in supply chain processes. The positive impact of accurate demand forecasts on inventory management, cost control and overall financial performance is emphasized. For this reason, demand forcesting will have a positive effect on firm performance. Accordingly, the hypotheses of the study were developed as follows.

- **H_2:** Demand Forecasting positively affects Firm Performance.
- **H_6:** Demand Forecasting positively affects Marketing Performance.

2.2.4. Capacity Allocation

Talluri and van Ryzin (2004, p.3) define capacity allocation as the process of deciding whether to accept or reject a purchase offer, determining how to distribute capacity among different segments or channels, and choosing when to either withhold a product from the market or sell it at a later time. Every time a new customer arrives, practitioners of revenue management must make the decision of whether to allocate current capacity to the incoming customer or reserve it for a potential customer willing to pay a higher price, with no certainty that such a customer will materialize (Cavusoglu and Macário, 2021). Businesses employ allocation algorithms that consider the probability of future demand when assigning capacity. Essentially, in an environment of constrained supply, companies aim to maximize profit by selling this supply at the highest possible price (Crystal, 2007). The concept of capacity allocation is a key part of revenue management and is therefore included in revenue management technical capabilities. The study by Pereira et al.

(2016) provides a specific example of how capacity allocation and management in hotels affects firm performance. For this reason, capacity allocation will have a positive effect on firm performance. Accordingly, the hypotheses of the study were developed as follows.

- **H3:** Capacity allocation positively affects firm performance.
- **H7**: Capacity allocation positively affects Marketing performance.

2.2.5. Information Technologies

Information technologies play a crucial role in the hotel industry, impacting various aspects of operations and guest experiences. IT adoption can enhance hotel branding, customer loyalty, and business performance (Varelas et al., 2021). Practitioners base revenue management decisions on extensive datasets stored, cleaned, and analysed within an information technology system, thereby incorporating information technology into their technical specifications. According to Stratman and Roth (2002), information technology encompasses the hardware, software, and personnel necessary for designing and maintaining information systems that support business operations. Firms must make good use of information technology resources to successfully use revenue management. Based on the data and programs within an IT system, companies can segment markets, grasp consumers' price elasticity, and allocate capacity more efficiently (Talluri and Van Ryzin, 2004). In the study conducted by **Mithas, Tafti, and Mitchell (2013)**, it is emphasized that the strategic implementation of information technologies positively impacts firms' operational and financial performance. The study demonstrates that the use of digital strategies and information technologies provides a competitive advantage, thereby enhancing firm performance. Therefore, it can be said that information technologies will have a positive effect on firm performance. Accordingly, the hypotheses of the study were developed as follows.

- **H4:** Information Technology positively affects Firm Performance.
- **H8:** Information Technology positively affects Marketing Performance.

2.3. Firm Performance

Businesses are established with diverse objectives, whether driven by profit motives or not. The operator's performance is primarily gauged by their contributions and achievements in managing the business, facilitating its operation, growth, and development. Performance constitutes a multifaceted concept, with outcomes varying depending on the factors assessed (Zhou et al., 2007, p.160).

The concept of performance is delineated in various manners within the literature. Due to its complexity in measurement, conceptualization, and definition, researchers evaluate it from diverse perspectives (Folan et al., 2007). Taouab and Zineb (1987) equate performance with organizational effectiveness, defining it as criteria for assessment: productivity, relevance, and institutionalization. Robbins (1987) defined performance as the extent to which an organization, viewed as a social system, effectively considers both its resources and its objectives. Lastly, Cohen (1994) highlights the connection between performance and productivity by examining the outcomes achieved by a business in relation to the resources utilized.

Previously, performance measurement was based entirely on financial indicators reflecting the short-term situation. However, performance measurement systems based only on financial indicators based on past data do not provide sufficient contribution to managers' decision-making processes for the future (Voelker et al., 2001). In addition to financial statements based on past data, non-financial dimensions should be evaluated for the future. These dimensions can be expressed as quality, flexibility, innovation, speed, customer satisfaction, shareholder satisfaction, internal efficiency and personnel development (Yıldız et al., 2010). In short, organizations should evaluate the present as well as the past in their performance measurement processes. Scholarly literature suggests that relying solely on financial indicators for performance measurement is inadequate. Therefore, in this study, both financial

and non-financial indicators will be used in performance measurement.

3. Methodology of the Study

This section outlines the research objectives and sub-objectives, establishes the research model, and describes the methodology employed, which includes the research population, data collection tools, process, and analysis procedures.

3. 1. Research Model

The purpose of a research explains a general statement that reveals the ultimate goals of the study. Therefore, the purpose of a research should be of a quality that reveals the research problem, the problem to be solved in the research, the basic concepts of the research and the relationship between these concepts (Bilgin, 2015).

The primary aim of the research is to uncover the interconnections among the facets of revenue management technical capabilities, encompassing market segmentation, pricing, demand forecasting, capacity allocation, and information technologies, and their impact on firm performance. Using the model crafted within the research framework, the relationships between dependent and independent variables will undergo testing, and hypotheses will be formulated and subsequently tested.

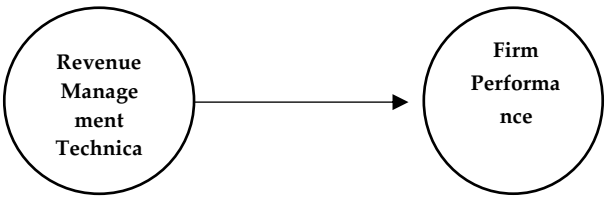

Figure 1. General Model of the Study

The model, which details the sub-dimensions of the variables in the general framework, illustrates the mediating effect of customer relationship management on the relationship between revenue management technical capabilities and firm performance, and is constructed as follows.

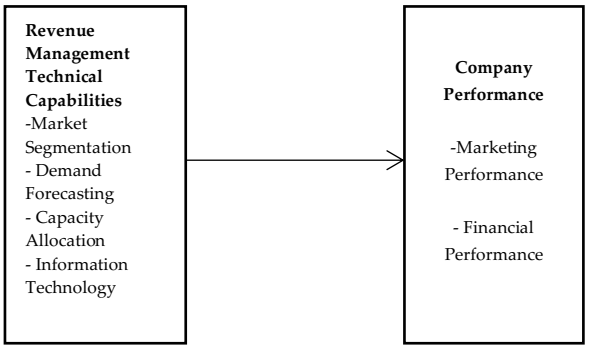

Figure 2. Detailed Model of the Study

3.2. Population and Sample

On September 22, 2002, in addition to the seven geographical regions traditionally used, a new regional classification was established. In line with Turkey's harmonization process with the European Union, in accordance with Law No. 2002/4720, the State Planning Organization and the Turkish Statistical Institute established three different levels of NUTS regions (TUIK, 2020).

The names of the regions and the provinces in the regions that constitute the universe of the study are as follows (TÜİK, 2020):

- TR1: Istanbul, TR2- WEST MARMARA, TR21: Tekirdağ, Edirne, Kırklareli, TR22: Balıkesir, Çanakkale, TR4: EAST MARMARA, TR41: Bursa, Eskişehir, Bilecik, TR42: Kocaeli, Sakarya, Bolu, Düzce, Yalova (TUİK, 2020).

The population of this study, in which the quantitative research method was used, consists of 3, 4 and 5 star hotel establishments with Tourism Operation Certificates operating in TR1, TR2 and TR4 regions. The data needed for the research were collected from the enterprises included in the "Tourism Business Certified Facilities" statistical data of the General Directorate of Investment and Enterprises of the Ministry of Tourism for the year 2020. In the said data, 3, 4 and 5 stars and hotel options were selected from the facility class and facility type filter categories and filtered. According to data from the Ministry of Culture and Tourism as of February 2020, there are 680 3, 4, and 5-star hotels with Tourism Operation Certificates operating in the TR1, TR2, and TR4 regions of Turkey (Table 1).

Table 1. 3,4 and 5 Star Hotel Establishments with Tourism Management Certificate in TR1, TR2 and TR4 Regions

Provinces	3 STAR	4 STAR	5 STAR	Total Number of Hotels
Balıkesir	29	11	5	45
Bilecik	2	1	-	3
Bolu	5	6	4	15
Bursa	26	21	10	57
Canakkale	34	8	2	44
Duzce	5	2	1	8
Edirne	10	1	1	12
Eskisehir	19	5	3	27
Istanbul	132	142	111	385
Kirklareli	4	-	1	5
Kocaeli	16	14	6	36
Sakarya	6	6	4	16
Tekirdag	10	5	2	17
Yalova	4	4	2	10
Total	302	227	151	
General Total				**680**

Source: General Directorate of Investment and Enterprises (20.02.2020)

Tabachnick and Fidell (2013) state that according to the formulas used in multivariate statistical analyses, there should be at least 10-15 participants for each independent variable in order for the sample size to have sufficient power.When the values were placed in the sample calculation formula, the sample size was calculated as 246 with a 95% confidence interval. As a result of the study, 317 questionnaires were collected. Hence, the quantity of questionnaires gathered was deemed to be indicative of the population. The table below shows the distribution of the surveyed hotels according to the number of stars. In addition, the proportional sample size according to the number of stars of the hotels was calculated and shown in Table 2.

Table** Hata! Belgede belirtilen stilde metne rastlanmadı.**2. Hotels Surveyed by Number of Stars

	3 STAR	4 STAR	5 STAR	Total
Survey Collected	112	130	75	317

Table 3. Sample Size Proportional to the Number of Stars

Provinces	3 STAR	4 STAR	5 STAR	Total Number of Hotels
Total	302	227	151	**680**
Proportional Sample Size	109	82	55	

***Sample Size:** 246 (95% Confidence Level 5% Margin of Error)*

When the tables above are examined, the number of hotels targeted to be reached according to the proportional sample size was determined according to the star class before starting the research. As can be seen in the tables, the number of questionnaires collected was as targeted.

3.3. Data Collection Tools

The most appropriate scales for the research topic were determined with the help of academicians specialized in revenue management technical capabilities and firm performance. For firm performance, a previously validated and reliable scale was used. For revenue management technical capabilities, the scale was adapted by applying content validity.

In this section of the study, details regarding the questionnaire employed as a quantitative data collection tool are elucidated. The questionnaire is structured into four parts. The initial segment of the questionnaire focuses on, market segmentation, pricing, forecasting, capacity management, information technologies, which are the technical capabilities of revenue management, were tried to be determined with Likert scale questions. In this section, statements aiming to determine the frequency of application of revenue management techniques coded as 1-"Strongly Disagree", 2-"Disagree", 3-"Neither agree nor disagree", 4-"Agree", 5-"Strongly Agree" on a five-point Likert scale were included. Secondly, the evaluation of the firm's performance according to competitors was tried to be determined with a five-point Likert-type scale. In the fourth part of the questionnaire, it was tried to obtain information about the socio-demographic characteristics of the managers who answered the questionnaire and the main characteristics of the hotel businesses they work in.

3.3.1. Scales of the Study

The research conducted in the literature revealed the existence of a scale developed by Crystal (2007) concerning revenue management technical capabilities. In the study conducted by Gür and Yıldız (2016), the scale developed by Crystal (2007)

was used and it was seen that its validity and reliability were ensured. As part of this study, adaptation studies were conducted on the revenue management technical skills scale prepared by Crystal. The Market Segmentation section consists of 5 questions, Pricing 7 questions, Demand Forecasting 6 questions, Capacity Allocation 6 questions and Information Technology 4 questions.In the initial phase of the adaptation study, the scale was translated into Turkish by proficient translators. After the Turkish translation, it was translated back into English to check whether there was a change in meaning, and finally, it was translated back into Turkish by experts. There are some techniques that were used to finalize the scale by getting opinions from experts. One of these techniques is the Lawshe technique and another is the Davis technique. Within the scope of the research, Davis technique was used to finalize the scale of revenue management technical capabilities. Thus, the scale of revenue management technical capabilities was finalized.

The revenue management technical capabilities scale consists of market segmentation, pricing, demand forecasting, capacity allocation and information technology dimensions. Revenue management technical capabilities consist of 28 questions in total .In order to measure the variable of revenue management technical capabilities, a scale with twenty-eight statements, the validity and reliability of which have been previously tested, was used. The statements in the scale are suitable for the field and the field study.

The items for the firm performance variable were adopted from the study conducted by Öncü and Kethüda (2012), which had established validity and reliability. In this study, the Cronbach's alpha coefficient for the scale was determined to be 0.89, affirming its reliability. Consequently, the decision was made to incorporate the firm performance scale into the current study.

3.4. Data Collection

The survey implementation process, initiated in June 2020, concluded in February 2021 after seven months of endeavour. Ethics committee permission for this study was obtained with the decision of Düzce University Social Sciences Institute Ethics Committee dated 14/05/2020 and numbered 2020/71. Notably, on March 11, 2020, the Ministry of Health confirmed the first case of the COVID-19 pandemic in Turkey. Due to the pandemic that affected the world, many hotel establishments had to remain closed. Therefore, it took more time than expected to reach the data of the research. The contact information of the hotel establishments with tourism business certificates, which constitute the research population, was obtained from the official website of the Ministry of Culture and Tourism. The data of the research were obtained from the managers of tourism certified hotel establishments operating in the provinces located in TR1, TR2 and TR4 regions through face-to-face, telephone and e-mail surveys. Before the field research was conducted, the people who voluntarily participated were informed about the research. The data collection process consisted of the interviewer reading the questions and the respondent selecting the appropriate option. The participants were duly informed that the outcomes would be utilized solely for academic purposes.

3.5. Data Analysis

Within the scope of the research, factor analyses will be conducted to determine how many different sub-dimensions and at what level the scales related to the dimensions of revenue management technical capabilities and firm performance are perceived by the managers of the hotel enterprises participating in the research.

The statistical technique employed for the analysis can be termed Exploratory Factor Analysis (EFA) or descriptive factor analysis. This method operates under the assumption that any indicator or variable can be associated with any factor. Factor analysis serves as a tool to condense a large number of variables into a smaller set of factors. It aims to extract the maximum shared variance from all variables and consolidate them into a unified score (Nishantha et al., 2019: 66).

Structural equation modelling will also be used in the research. The purpose of structural equation modelling in its most common form is to account for the variation and covariation of measured variables. Structural equation modelling method is a method that is used in testing many theories and developing new models due to its usefulness in testing complex models, facilitating the detection of mediation and moderating effects, conducting a large number of analyses at once, taking into account measurement errors, and recommending new arrangements, if necessary, regarding the relationships in the examined model (Dursun and Kocagöz, 2010, p.2).

4. Findings

In this section of the research, the data collected from hotel operations will undergo analysis, and interpretations will be drawn based on the findings. Initially, demographic characteristics of the participants in the field research will be outlined. Subsequently, validity and reliability analyses of the scales used in the research will be conducted. Finally, the findings pertaining to the relationships and distinctions between the variables will be presented.

4.1. Findings Related to Participants and Hotel Establishments

In this section, findings regarding some characteristics of the participants and the hotel establishments where they work are presented.

4.1.1. Findings Related to Participants

Survey questions were asked to hotels that had a revenue manager and to department managers who could answer questions in that area in hotels that did not have one. Each hotel was represented by a senior manager.Demographic data on the hotel managers who completed the questionnaire form are presented in Table 4.

The study revealed that the majority of hotel managers surveyed were male, with 19.9% being female and 80.1% male. Additionally, most respondents were over the age of 30 and possessed a bachelor's degree. Regarding tenure, 39.4% reported 0-4 years, 27.8% reported 5-9 years, 13.9% reported 10-14 years, 8.8% reported 15-19 years, and 9.8% reported 20 years or more in their current position. Notably, over 50% of participants had been employed at the same hotel for four years or longer.

Table 3. Findings Related to Participants

Individual Data		**F**	**%**
Gender	Woman	63	19,9
	Male	254	80,1
	Total	317	100.0
Age	20-39	55	17,4
	30-39	145	45,7
	40-49	82	25,9
	50-59	27	8,5
	60 and above	8	2,5
	Total	317	100,0
Education Status of Participants	High School	48	15.1
	Associate Degree	20	6,3
	Undergraduate	228	71,9
	Postgraduate	21	6,6
	Total	317	100.0
How many years have you been working in this position	0-4 Years	126	39,7
	5-9 Years	88	27,8
	10-14 Years	44	13,9
	15-19 Years	28	8,8
	More than 20 Years	31	9,8
	Total	317	100,0
Duration of the Participants' Employment in the Hotel Management	Less than 1 Year	25	7,9
	1-3 Years	98	30,9
	4-6 Years	102	32,2
	7-10 Years	52	16,4
	More than 10 Years	40	12,6
	Total	317	100,0

Table 5 shows the characteristics of the hotel establishments that completed the research questionnaire.

Table 4. Characteristics of Hotel Establishments

		F	%
Hotel's Year of Operation	0-4 Years	53	16,7
	5-9 Years	129	40,7
	10-14 Years	11	3,5
	15-19 Years	47	14,8
	More than 20 Years	77	24,3
Hotel Status	Hotel company of an international chain	90	28,4
	A hotel affiliated to a national chain	36	11,4
	National hotel company (Inc.)	73	23,0
	National Sole Proprietorship Hotel Business (Independent)	118	37,2
	Yes	152	47,9
	No.	165	52,1

Revenue Manager Availability	Total	317	100,0

When we look at the general characteristics of the hotel establishments where the research was conducted; it is seen that more than 50% of the hotels have been operating for 5 years or more. When the data of the research are analysed, it is seen that most of the hotels are national hotel establishments. When asked whether a software related to revenue management is used in the hotels where the research was conducted, 56.8% of the managers answered yes and 43.2% answered no. These rates show that the rate of use of revenue management software in the hotels subject to the research is not very high. While 47.9% of the hotels have a revenue manager, 52.1% do not have a revenue manager. This rate is similar to the rates of revenue management software.

4.2. Findings On Research Variables

4.2.1. Findings on the Reliability of the Scales

Factor analyses were employed to assess the construct validity of the scales measuring revenue management technical capabilities and firm performance in the study. Furthermore, Cronbach's alpha was utilized to evaluate the reliability of these scales. The following table presents the outcomes of the reliability analysis for the scales utilized in the research.

Table 5. Reliability Analysis Results of Research Variables

Variables	Dimensions	Number of Statements	Cronbach's Alpha (A) Values
Revenue Management Technical Skills (0.892)	Market Segmentation	5	0,797
	Pricing	7	0,710
	Demand Forecasting	6	0,802
	Capacity Allocation	6	0,768
	Information Technology	4	0,842
Firm Performance		10	0,845

In social sciences research, Cronbach's alpha value of 0.70 and above is considered sufficient for reliability (Nakip, 2006, p.146). When Table 6 is analysed, it is seen that the reliability of the revenue management technical capabilities, customer relationship management and firm performance scales used in the research are at an acceptable level.

4.2.2. Factor Analysis

Exploratory factor analysis was first applied to the variables of revenue management technical capabilities and firm performance. The findings related to these variables are shared in the following sections.

4.2.2.1. Exploratory Factor Analysis of Revenue Management Technical Capabilities

The results of factor analysis and variance explained for revenue management technical capabilities are shown in table 7.

Table 6. Revenue Management Technical Capabilities Factor Analysis Results

Mediating Variable of the Study			Rotated Factor Loadings	Aritmetic Mean	Variance %	Cumulative Variance %
Demand Forecast	TT1	Compared to our competitors, our hotel's demand forecasts are more accurate.	,653	4,268139	12,03	12,03
	TT2	Demand forecasts are regularly updated according to developments.	,711			
	TT3	We use demand forecasts from various sources to make business decisions.	,575			
	TT4	We use accurate and up-to-date data for demand forecasts.	,594			
	TT5	Our hotel accurately tracks customers who have canceled their reservation and whose reservation request has been rejected.	,702			
	TT6	We take into account projected demand forecasts when making business decisions	,593			
Market	PB1	We group our customers according to our business strategy.	,719		11,91	23,94
	PB2	We categorize customers based on similar	,796	3,966562		

		purchasing characteristics.				
	PB3	We have customer groups categorized according to identifiable characteristics.	,700			
	PB4	Taking into account different customer groups, we differentiate the promotion of our hotel for each group.	,650			
	P5	We regularly review whether we have well-defined market segments.	,696			
Information Technology	BT1	Our Information Technology (IT) adequately supports the revenue management system.	,763	4,19475	11,39	35,34
	BT2	We create solutions in our computer system to complete routine Revenue Management tasks.	,798			
	BT3	The Revenue Management Information Technologies system meets the needs of our hotel.	,729			
	BT4	Our reservations and revenue management system are integrated in real time.	,784			
Capacity Allocation	KT2	We have the tools to make profitable, analytics-based booking decisions for groups.	,643	4,144374	10,88	46,22
	KT3	We overbook customers in a logical way, understanding that the occasional unbooked customer is part of our goal to increase revenue.	,637			
	KT4	Our hotel is constantly full on a certain night of the week.	,702			
	KT5	When analyzing the value of specific customers, in addition to the room rate, other expenses (food, beverages, spa, etc.) are also taken into account.	,687			
	KT6	We have rooms where we can always accommodate our important clients.	,622			
Pricing	F1	When setting room rates, we consider the impact of the price on customer satisfaction and its impact on short-term revenue.	,582	4,24816	8,971	55,19
	F2	Our hotel has an effective policy that it uses to set room rates.	,452			
	F3	We set our room rates according to the value of the room in the eyes of the customer.	,697			
	F4	We also take competitors into account when deciding on room rates.	,652			
	F5	When setting room rates, we take into account the customers' reaction to the price change.	,618			

Factor extraction method: Principal component analysis; Rotation method: Verimax; KMO Sampling Adequacy: 0.854%; p=0.000(1) Strongly disagree, (2) Disagree, (3) Neither agree nor disagree, (4) Agree, (5) Strongly agree

When the table is examined, factor analysis was performed to determine the dimensions related to the revenue management technical capabilities of hotel businesses and as a result of the analysis, it is seen that the KMO and Bartlett test values are suitable for factor analysis (KMO value 0.854. Bartlett Test result p<0.001). This value is accepted as a valid value according to many sources in the literature (Field, 2009; Pallant, 2013)

In the factor analysis of revenue management technical capabilities, a varimax transformation was applied, and factors that were deemed irrelevant were excluded. Initially, it was noted that revenue management technical capabilities comprised six dimensions. However, items such as s19, s11, and s12 were eliminated from the analysis due to loading on multiple factors with minor distinctions. Consequently, the analysis revealed that the revenue management technical capabilities factor retained six dimensions.

According to Tabachnick and Fidell (2007), the factor loading should be .30 or greater because any lower value indicates a really weak relationship between the variables. After removing the items that loaded with low factor loadings, the factor analysis was repeated and it was seen that revenue management technical capabilities consisted of five dimensions. The explained variance table is important in factor analysis. Explained variance exceeding 50% is an important criterion in factor analysis. If the factor structure created within the scope of the study explains less than 50% of the variable variance, it can be said that it is not representative (Yaşlıoğlu, 2017, p.77). Based on the findings within the research scope, it was established that the explained variance ratio amounted to 55.195%. This outcome suggests a relationship between the variables, indicating the suitability of applying factor analysis.

4.2.2.2. Confirmatory Factor Analysis of Revenue Management Technical Capabilities

In the study, Confirmatory Factor Analysis was performed to confirm that the factor structure

derived from Exploratory Factor Analysis accurately represents the data and to ensure that the model fits well within the context of our research objectives. No items were added or removed in the CFA phase. Instead, we focused on validating the factors previously identified in the EFA. The aim was to verify that the items loading on each factor were indeed appropriate and that the overall model met the established goodness-of-fit criteria.

Confirmatory factor analysis was conducted on the independent variable of the study prior to path analysis. Below are the standardized values obtained as a result of this analysis. The findings of the primary level confirmatory factor analysis for the market segmentation, pricing, demand forecasting, capacity allocation and information technology dimensions of revenue management technical capabilities are presented below.

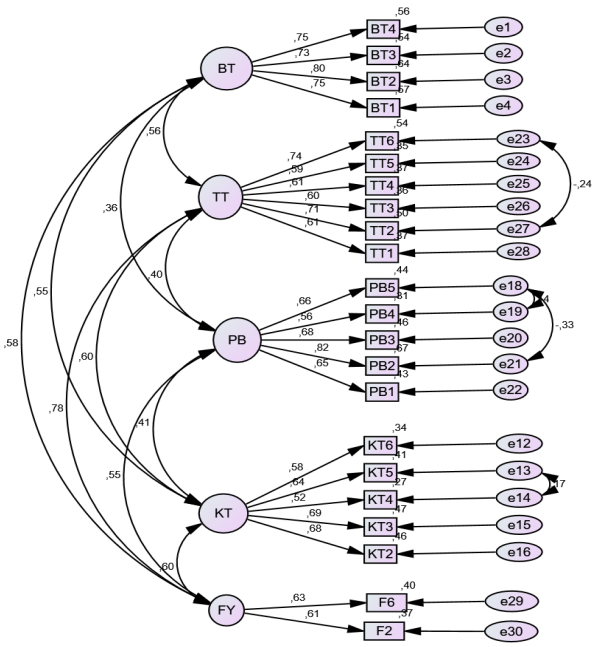

Figure 3. Revenue Management Technical Capabilities Primary Level Confirmatory Factor Analysis

Confirmatory factor analysis was performed on the revenue management technical capabilities variables using the Amos program. The outcome of the confirmatory factor analysis is illustrated in Figure 4.1. During the confirmatory factor analysis, the factor loadings for each item were scrutinized, and items exhibiting low factor loadings (<0.50) were eliminated from the model. Specifically, the KT1 item pertaining to capacity allocation was excluded from the model due to its low factor value.

To be termed a factor, an entity typically requires a minimum of three variables, although this criterion may vary based on the study's framework. As a rule of thumb, interpreting rotated factors containing two or fewer variables should be approached cautiously. A factor composed of two variables is deemed dependable only if these variables exhibit a strong correlation between them (r > .70) while maintaining low correlations with other variables, as outlined by Tabachnick and Fidell in 2007. Therefore, as a result of confirmatory factor analysis, the pricing dimension, which was reduced to F6 and F2 variables as indicated in Figure 3, whose factor loadings were less than r> .70, was removed from the model.

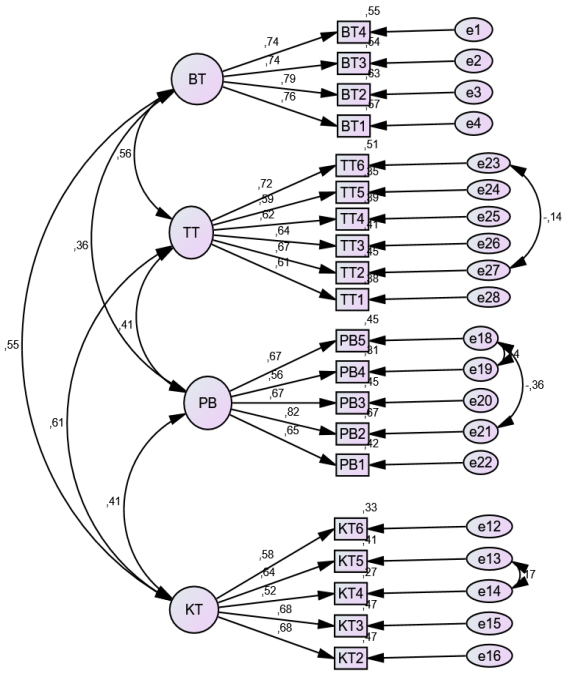

Figure** Hata! Belgede belirtilen stilde metne rastlanmadı.**4. Four-Dimensional Revenue Management Technical Capabilities Primary Level Confirmatory Factor Analysis

The following table of goodness-of-fit values summarizes the basic goodness-of-fit statistics and their acceptable values commonly used in the field of structural equations modeling (SEM).

Table 8. Fit Indices Table

Goodness of Fit Statistic	Good Fit	Acceptable
Chi-Square (χ^2)	≤ 3	≤ 5
GFI (Goodness of Fit Index)	≥ 0,95	≥ 0,90

CFI (Comparative Fit Index)	≥ 0,97	≥ 0,90
TLI (Tucker-Lewis Index)	≥ 0,95	≥ 0,90
RMSEA (Root Mean Square Error of Approximation)	≤ 0,05	≤ 0,08

Source: Meydan, C. H., ve Şeşen, H. (2011). Yapısal Eşitlik Modellemesi: Amos Uygulamaları. Ankara: Detay Yayın;

When the fit index values resulting from the linear factor analysis are examined, it can be stated that the model is a valid and statistically significant model since the significance value of the model is less than 0.05. CMIN/DF ($\chi 2$ value)= 1,545 and RMSEA= ,042 for the measurement model. In his study, Kline (2011) defines various fit indices that are important for evaluating model fit and provides information about appropriate value ranges. Since these findings are among the acceptable fit values, they indicate an acceptable fit. On the other hand, NFI=,910; CFI=,958; IFI=,958 and TLI=,959 and these values indicate a high level of fit. As a result, the findings of the analysis show that Revenue management technical capabilities is a valid model since the fit indices are within the acceptable fit values in the literature.

Kline, model uyumunu değerlendirmek için önemli olan çeşitli uyum indekslerini tanımlamakta ve uygun değer aralıkları hakkında bilgi vermektedir.

4.2.2.3. Exploratory Factor Analysis of Firm Performance

The results of the factor analysis and variance explained for Firm Performance are shown in Table 8.

Table 9. Firm Performance Factor Analysis Results

		Variable of the Study	Rotated Factor Loadings	Aritmetic Mean	Variance %	Cumulative Variance %
Marketing Performance	PP1	Customer Satisfaction	718	3,8406	34,790	34,790
	PP2	Customer Trust	770			
	PP3	Customer Loyalty	796			
	PP4	Worker Satisfaction	764			
	PP5	Employee Training	727			
	PP6	Number of Innovations	732			
Financial Performance	FP1	Occupancy Rate	,807	4,1285	28,249	63,039
	FP2	Turnover Profitability	,866			
	FP3	Return on Capital	889			
	FP4	Return on Investment	723			

According to Field (2013), it is stated that the model will be considered sufficient if the total variance in factor analysis is above 50%. Field states that the variables are adequately represented and exceeding this rate will increase the reliability of the model. Upon applying factor analysis to the performance measurement scale, the identification of 2 factors with eigenvalues exceeding 1 was noted. These two factors, derived from the analysis, collectively account for 63.039% of the total variance. 6 ideas are under the first factor and 4 factors are under the second factor. These two factors include finals and marketing related indicators. Therefore, the factor containing marketing indicators is named 'Marketing Performance'. The second factor is named 'Financial Performance' since it includes financial indicators. The data subjected to factor analysis in order to determine the dimensions of firm performance of hotel businesses are found to be suitable for factor analysis since the KMO and Bartlett's value is 0.840 and Bartlett's test result is $p < 0.01$.

4.2.2.4. Firm Performance Confirmatory Factor Analysis

Before conducting path analysis on Firm Performance, which is one of the dependent variables of the study, primary level confirmatory factor analysis was applied. The standardized values determined as a result of the analysis are given below. The findings related to the primary level confirmatory factor analysis applied to the financial performance and marketing performance dimensions of Firm Performance are given below.

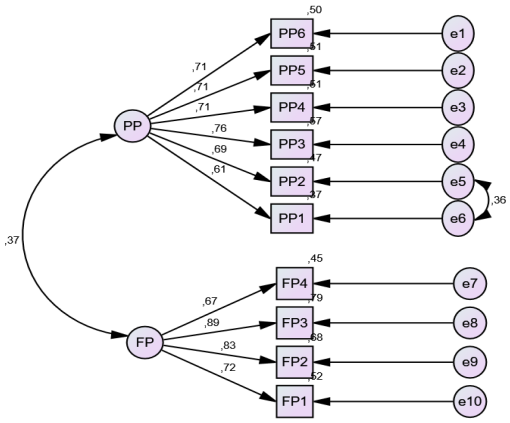

Figure 5. Firm Performance Primary Level Confirmatory Factor Analysis

When the fit index values resulting from the linear factor analysis are examined, it can be stated that the model is a valid and statistically significant model since the significance value of the model is less than 0.05. CMIN/DF (χ2 value)=2,844 and RMSEA= ,076 of the measurement model. Since these findings are among the acceptable fit values, they indicate an acceptable fit. On the other hand, NFI=,935; CFI=,957; IFI=,957 and TLI=,941 and these values indicate a high level of fit. As a result, the findings of the analysis show that the Firm Performance model is a valid model since the fit indices are within the acceptable fit values in the literature.

4.3. Testing the Impact of Revenue Management Technical Capabilities on Firm Performance

In this section, the effect of revenue management technical capabilities, which are the independent variables of the study, on firm performance will be tested. Revenue management technical capabilities consist of market segmentation, demand forecasting, capacity allocation and information technology. Hotels practicing revenue management are expected to have different firm performance compared to their competitors.

4.3.1. Findings Related to Path Analysis

Path analysis determines the structural relationship between quantitative variables. In addition, it is a method used to determine the proportion of direct and indirect effects of independent variables on dependent variables (Koyuncuoglu et al. 2012). Path coefficient (p) number is the standardized regression coefficient showing the direct effect of the independent variable on the dependent variable (Karagöz, 2016: 1069). Three types of effects can be mentioned in path analysis; direct, indirect and total effects. The effect of a variable without any intermediary is called direct effect, and the effect of a variable on another variable through a third variable (intermediary variable) is called indirect effect.

Path analysis was conducted to reveal the relationship between revenue management technical capabilities and firm performance and to test the hypotheses. The output below shows the standardized direct effects of path analysis between variables.

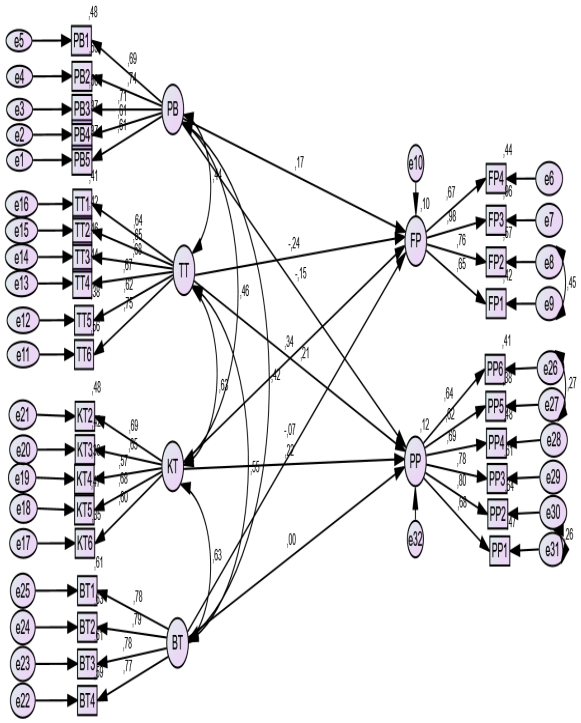

Figure 6. Path Analysis Showing the Relationship between Revenue Management Technical Capabilities and Firm Performance (CMIN/DF:1.900; RMSEA= 0.056; CFI:, 905; IFI: 0.906; TLI: 0.902)

Figure 5.1 shows only the paths towards significant relationships at the 0.05 (95%) significance level. In order to increase the goodness of fit values, covariances were introduced between some latent variables and the model was found to be supported by the data. SEM results for the relevant model are shown in Table 9.

The SEM results for the research model, standardized regression coefficients (β), critical ratio (C.R.), multiple coefficient of determination (R^2) and significance (p) values for structural relationships are shown in the Table 9. The results show that there is a same directional relationship between financial performance and market segmentation (.166); there is an inverse relationship between financial performance and demand forecasting (-.237); there is a same directional relationship between financial performance and capacity allocation (.338) and finally there is an inverse relationship between financial performance and information technology (-.071). It is confirmed at 0.05 significance level that the independent latent variable financial performance explains 10% of the dependent latent variables market segmentation, demand forecasting, capacity allocation and information technology. The rate that the independent variable cannot explain is 90%.

Table 10. Research Model SEM Results (N=317)

Structural Relationships	Standardized Regression Coefficient	Critical Ratio (C.R)	R^2	p	Hypotheses	Hypothesis Results
FP <- - - -PB	,166	2,029	,10	,042	H1	Supported
FP <- - - -TT	-,237	-2,354		,019	H2	Supported
FP <- - - - KT	,338	2,818		,005	H3	Supported
FP <- - - -BT	-,071	-0,747		,455	H4	Not supported
PP <- - -PB	-,150	-1,762	,12	,078	H5	Not supported
PP <- - - - TT	,211	2,046		0,41	H6	Supported
PP <- - - - KT	,222	1,851		0,50	H7	Supported
PP <- - - - BT	,004	0,038		,970	H8	Not supported

There is an inverse relationship between marketing performance and market segmentation (-,150); there is a same directional relationship between marketing performance and demand forecasting (-,211); there is a same directional relationship between marketing performance and capacity allocation (,222) and finally there is a same directional relationship between marketing performance and information technologies (,004). It is confirmed at 0.05 significance level that the independent latent variable marketing performance explains 12% of the dependent latent variables market segmentation, demand forecasting, capacity allocation and information technology. The rate that the independent variable cannot explain is 88%.

When Table 9 is analyzed, it is seen that market segmentation has a statistically significant and positive effect on the financial performance of hotel businesses (β: ,166 p<0.05). Moreover, demand forecasting affects financial performance negatively (β: ,-237 p<0.05) and capacity allocation affects financial performance positively (β: ,338 p<0.05). In addition, demand forecasting (β: ,211 p<0.05) and capacity allocation (β: ,222 p<0.05) positively affect marketing performance. In this context, the results of the accepted and rejected hypotheses are as shown in Table 9.

5. Conclusion and Discussion

The study focuses on the relationship between revenue management technical capabilities and firm performance. The research model includes revenue management technical capabilities such as market segmentation, demand forecasting, capacity allocation, and information technology, and their impact on marketing and financial performance. The study uses both financial and non-financial indicators for performance measurement, emphasizing the importance of evaluating non-financial dimensions such as quality, flexibility, innovation, speed, customer satisfaction, shareholder satisfaction, internal efficiency, and personnel development

The connection between revenue management and firm performance is a significant concern for both business leaders and researchers. Revenue management encompasses the tactics a company employs to boost or preserve its income streams, and how well these tactics are executed can affect company performance. Studies indicate that proficient revenue management practices have the potential to enhance a company's profitability,

refine risk management, and bolster its financial stability. Revenue management strategies may encompass various aspects such as pricing, segmenting products and services, managing marketing communications, and nurturing customer relationships. Skillful adoption and execution of these strategies enable the company to secure a competitive edge and foster sustainable growth. Hence, recognizing the correlation between revenue management and firm performance emerges as a crucial consideration in the formulation of strategies and decision-making processes for business leaders.

The findings of the study focuses on the relationship between revenue management technical capabilities and firm performance. Path analysis was conducted to reveal the structural relationship between these variables and to test the hypotheses. The standardized direct effects of path analysis between variables were presented, showing the relationship between revenue management technical capabilities and firm performance. The results of the path analysis indicate the standardized regression coefficients, critical ratios, and hypothesis results for the structural relationships. The findings suggest that the study aimed to determine the proportion of direct and indirect effects of independent variables on dependent variables, shedding light on the impact of revenue management technical capabilities on firm performance.

The structural equation modeling (SEM) results reveal insightful relationships between various factors and both financial and marketing performance within hotel businesses. Firstly, it is evident that market segmentation exhibits a statistically significant and positive effect on financial performance (β: 0.166, $p < 0.05$), indicating that strategies aimed at effectively segmenting the market can lead to improved financial outcomes for hotels. Market segmentation has a positive effect on financial performance, which is also supported by previous studies. Kotler and Keller (2012) emphasized that hotels can increase their revenues by increasing customer satisfaction and optimizing their marketing activities if they successfully implement market segmentation. In addition, Dolnicar (2008) stated that segmentation-based strategies provide hotel businesses with more targeted marketing opportunities, which in turn enables more effective implementation of pricing strategies and demand management. The results are consistent with these studies and show that segmentation improves financial performance.

Conversely, demand forecasting shows an inverse relationship with financial performance (β: -0.237, $p < 0.05$), suggesting that inaccurate or ineffective forecasting methods may adversely impact financial performance. The inverse relationship between demand forecasting and financial performance has been emphasized in some studies. Weatherford and Kimes (2003) stated that errors in demand forecasting in hotel businesses generally lead to revenue losses and operational efficiency reductions. Ineffective forecasting can lead to overstaffing or understaffing, inaccurate pricing strategies, and mislocation of resources, all of which can negatively affect financial performance. This finding also coincides with such studies in the literature. In particular, the difficulties of accurate demand forecasting are emphasized and unsuccessful demand forecasting can negatively affect financial performance.

However, capacity allocation demonstrates a positive and significant association with financial performance (β: 0.338, $p < 0.05$), highlighting the importance of efficiently allocating resources within hotel operations to enhance financial outcomes. The strong positive relationship between capacity allocation and financial performance has also been frequently emphasized in studies on operational efficiency and revenue management in hotel businesses. Enz and Canina (2010) stated that hotels can significantly increase their financial performance by optimizing costs and maximizing revenue by using their existing resources and capacities in the most efficient way. In addition, Chiang and Jang (2007) stated that the correct allocation of capacity in hotels plays a key role in revenue management strategies, and thus room occupancy and pricing policies can be managed more efficiently. The results are parallel to these literature findings and reveal that capacity

management significantly affects financial performance.

Furthermore, regarding marketing performance, market segmentation also exhibits a statistically significant and positive effect (β: 0.150, $p < 0.05$), indicating its importance in driving marketing success within hotel businesses. The positive effect of market segmentation on marketing performance is also supported by previous studies. Kotler and Keller (2012) stated that segmentation increases customer satisfaction and marketing effectiveness by allowing marketing strategies to be implemented in a more targeted manner. In addition, Dolnicar (2008) revealed that segmentation-based strategies provide hotels with more specific marketing opportunities for their target audiences, allowing products or services to be marketed more effectively to the right customer groups. This finding is consistent with the existing literature and shows that market segmentation plays an important role in increasing marketing performance in hotel businesses.

Similarly, both demand forecasting (β: 0.211, $p < 0.05$) and capacity allocation (β: 0.222, $p < 0.05$) positively influence marketing performance, emphasizing their role in shaping effective marketing strategies. The positive effect of demand forecasting on marketing performance is also a subject emphasized in the literature. Armstrong (2001) stated that accurate demand forecasting provides businesses with the opportunity to better understand customer demands and develop strategies appropriate to these demands. The accuracy of demand forecasts is critical for the timing and effectiveness of marketing strategies. Weatherford and Kimes (2003) also revealed that accurate demand forecasts are important in optimizing hotel businesses' occupancy rates and pricing strategies, thus increasing marketing performance. This finding in this study is consistent with these studies regarding the positive effect of demand forecasting on marketing. On the other hand, capacity allocation has been stated in previous studies as an important factor affecting marketing performance. Chiang and Jang (2007) stated that the correct allocation of capacity in hotel businesses enables more effective implementation of marketing strategies and thus customer demands are met more efficiently. In addition, Enz and Canina (2010) stated that correct capacity management ensures the correct use of resources required for the success of marketing campaigns. The positive effect found in the study coincides with these findings in the literature and confirms the contribution of capacity allocation to marketing performance.

The positive effects of market segmentation, demand forecasting and capacity allocation on marketing performance found in this study provide results consistent with studies in the literature. How these factors play an important role in the marketing success of hotel businesses has been supported by previous studies and their strategic importance has been emphasized. Overall, the findings underscore the significance of market segmentation, demand forecasting, and capacity allocation in influencing both financial and marketing performance within the hotel industry. By understanding and leveraging these relationships, hotel businesses can strategically optimize their operations and marketing efforts to achieve improved performance outcomes.

Research results show that there is a strong relationship between revenue management practices and firm performance. The findings of the study support that effective implementation of revenue management has the potential to increase a firm's profitability, improve risk management and strengthen its financial soundness. Proper adoption and implementation of revenue management strategies allows companies to gain competitive advantage and support their sustainable growth. However, it is important in future research to examine in more detail the effects of specific revenue management techniques and strategies on different industries and types of companies. Additionally, long-term studies are needed to track the effects of revenue management practices over time and understand how they respond to changing market conditions. This research offers a new perspective on the literature in the field of revenue management and can help business managers understand the importance of revenue management strategies.

While the study provides valuable insights into the relationships between various factors and the

financial and marketing performance of hotels, it is important to acknowledge several limitations: sample size and generalizability, cross-sectional nature of data, measurement error and bias, omitted variables and endogeneity, assumptions of structural equation modeling (SEM) and contextual factors**.** Acknowledging these limitations provides a clearer understanding of the scope and implications of the study's findings and highlights opportunities for future research to build upon this work and address unanswered questions.

6. Research limitations and future academic directions

For other researchers interested in exploring similar topics related to financial and marketing performance in the hotel industry, I would suggest the following avenues for further research:

1. **Longitudinal Studies**: Conducting longitudinal studies to examine how the relationships between factors such as market segmentation, demand forecasting, capacity allocation, and information technology evolve over time and their long-term effects on financial and marketing performance. Longitudinal data would provide valuable insights into trends and patterns, allowing researchers to better understand the dynamics of these relationships.
2. **Comparative Analysis**: Comparing the financial and marketing performance of hotels across different geographic regions, market segments, or hotel categories (e.g., luxury vs. budget hotels). Understanding variations in performance metrics across different contexts can shed light on the factors driving performance and inform strategic decision-making for hotel managers.
3. **Qualitative Research**: Supplement quantitative analyses with qualitative research methods such as interviews, focus groups, or case studies to gain a deeper understanding of the underlying mechanisms and processes influencing financial and marketing performance in the hotel industry. Qualitative insights can provide rich contextual information and uncover nuances that quantitative analyses may overlook.
4. **Moderating and Mediating Effects**: Investigating potential moderating or mediating variables that may influence the relationships between key factors and financial/marketing performance. For example, organizational factors (e.g., firm size, organizational culture) or external factors (e.g., economic conditions, regulatory environment) could moderate the effects of market segmentation or capacity allocation on performance outcomes.
5. **Interdisciplinary Perspectives**: Fostering interdisciplinary collaborations with scholars from fields such as economics, sociology, psychology, and computer science to gain diverse perspectives and leverage complementary expertise in studying financial and marketing performance in the hotel industry. Interdisciplinary approaches can lead to innovative insights and novel research methodologies.

By pursuing these suggestions, researchers can contribute to advancing knowledge and understanding of the factors influencing financial and marketing performance in the hotel industry and provide valuable insights to inform managerial decision-making and industry practices.

Limitations

1. **Sample Size and Generalizability**: The study may have been conducted using a limited sample size or within a specific geographic region, which may limit the generalizability of the findings to a broader population of hotels. Larger sample sizes and more diverse participant demographics would enhance the external validity of the study.
2. **Cross-Sectional Nature of Data**: The data collected for the study may have been cross-

sectional, capturing a snapshot of relationships at a single point in time. Longitudinal data would provide a more comprehensive understanding of how these relationships evolve over time and allow for causal inferences to be made.

3. **Measurement Error and Bias**: The accuracy and reliability of the data collected, including self-reported measures or survey responses, may be subject to measurement error and bias. This could potentially influence the strength and direction of the observed relationships between variables.
4. **Omitted Variables and Endogeneity**: The study may not have accounted for all relevant variables that could influence financial and marketing performance, leading to omitted variable bias. Additionally, endogeneity issues may arise if there are bidirectional relationships between variables that were not adequately addressed in the analysis.
5. **Assumptions of Structural Equation Modeling (SEM)**: SEM relies on several assumptions, including linearity, normality, and independence of observations. Violations of these assumptions could affect the validity of the results obtained from the analysis.
6. **Limitations of Statistical Analysis**: Despite the robustness of SEM, it is not without limitations. The complexity of SEM models and the potential for overfitting or model misspecification could impact the accuracy and interpretability of the results.
7. **Low Explanatory Power of the Model**: A low R^2 indicates that the model cannot adequately explain the variance of the dependent variable, thus the model has limited power to predict and accurately represent the relationship. This may reduce the overall validity of the model.
8. Finally, the study may suggest avenues for further research to address these limitations and explore additional factors or moderating variables that could influence financial and marketing performance in the hotel industry. Acknowledging these limitations provides a clearer understanding of the scope and implications of the study's findings and highlights opportunities for future research to build upon this work and address unanswered questions.

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