

Tourism, economic development and the corporate performance of the hospitality industry: An empirical study of Portuguese tourism regions

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Abstract

This study aimed to determine the effects of economic growth and tourism, as well as company-specific factors, on the business performance of the hospitality industry, through an empirical analysis with panel data, between 2011 and 2021, of 1299 hotels based in Portugal with the main economic activity classification 55 - Accommodation. The variables under study included financial performance indicators such as return on assets (ROA), return on equity (ROE), financial performance measured by a CP SCORE variable and characterization variables such as age, size, legal form and the region in which the hotels are based. The methodology used panel regression tests and the results suggest that macroeconomic factors may be partially responsible for a small part of the variation in firm performance. Economic growth has a positive influence on ROA and competitiveness and tourism growth on the profitability variables ROA and ROE. Age and size influence economic and financial performance and there are differences between firms' performance according to legal form and region.

Keywords: hospitality industry, corporate performance, economy, tourism growth, Portuguese tourism regions.

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1. Introduction

The tourism sector includes a wide range of business activities, which have expanded over recent times. The exponential growth in supply comes in response to the growth in demand, expanding activities and providing growth in the tourism sector and consequently an increase in the competitiveness of the sector's industry and the development of tourists. According to the United Nations World Tourism Organization (2023) international tourism outperformed in 2022, after a COVID-19 pandemic crime, resulting from a significant increase in demand and the lifting of travel restrictions in many countries, tourism reached pre-pandemic equivalent values. In 2022 it is estimated that more than 900 million tourists travelled internationally, double the amount rescued in 2021, although still 37% less than in the pre-pandemic year of 2019 (World Travel & Tourism Council, 2021). According to World Travel & Tourism Council (2022), the world's tourism and travel GDP grew by 21.7% (1,038 billion dollars) in 2021, a much higher figure compared to a global economic growth of 5.8%. According to United Nations World Tourism Organization (2024), in 2023, international tourism ended with an estimated 1.3 billion international arrivals, which corresponds to an increase of 34% compared to 2022. According to the same source, estimates of the direct gross domestic product of tourism point to 3.3 trillion dollars in 2023, or 3% of global GDP, the same level as in 2019, driven by domestic and international travel.

Considering the strong influence of the tourism sector on economies, it is crucial to analyse tourism companies, as well as the effects of the growth of the sector itself on the competitiveness of tourism enterprises. The hospitality industry is one of the fundamental segments of activity in the tourism sector and for developing tourist destinations. Over the past few years, hotel companies have faced a growing set of challenges and changes in trends, from new technologies, changes in reservations, and changes in demand trends, among others. The global hotel industry market grew until 2020, but faced a strong challenge with the COVID-19 pandemic, while this market declined considerably (Statista, 2023).

In Portugal, in 2022, overnight stays amounted to 69.5 million and increased by 86.3 million (Turismo de Portugal, 2023). Compared with the same period in 2019, there is still no complete recovery since overnight stays decreased by 0.9%. In 2022, total income amounted to 5,003.5 million euros, representing a growth of 114.7%, and tourist revenue reached 21.1 billion euros, which corresponds to a growth of 109.7% and 15.4% compared to the respective corresponding periods of 2021 and 2019, respectively.

Over recent times, the hospitality industry has experienced a huge set of changes and disruptions, which has implied a set of challenges and opportunities for the sector. The creation of new virtual communities based on new technologies and social networks generates a strong change in demand, creating more transparency and consequently an increase in the quality of service (Ernst & Young, 2017). The sharing economy has generated an additional offer of non-traditional accommodation and has made the activity more competitive.

Given the increasingly competitive environment, it is essential to study the competitiveness of the hotel sector and understand whether the sector's growth has allowed companies to become more competitive and, consequently more resilient, or if, on the other hand, the company's structure is less competitive. Performance and its measurement are key factors for the success of all tourism businesses (Sainaghi *et al.*, 2017). According to Estevão and Nunes (2015), competitiveness partly contributes to the construction of social, cultural and economic variables that strongly influence the destinations' performance in international markets. However, it is also critical to evaluate how tourism fits in the destinations and how forms of sustainable growth are achieved (Costa, 2020; Seyitoğlu, F., & Costa, C., 2022).

The development of tourism has improved the business environment for hotel companies. In turn, the expansion of tourist activities allows for an increase in occupancy rates and revenues and, consequently, the development of the hospitality industry (Chen, 2010). According to the author, the literature results

estimate that the expansion of tourism has a positive effect on the competitiveness of hotel companies (Aissa & Goaid, 2016; Al-Najjar, 2014; Balaguer & Cantavella-Jordá, 2002; Chen, 2007c, 2010; Proença & Soukiazis, 2008; Sami & Muhamed, 2014; Weerathunga *et al.*, 2020). Thus, much of the literature concludes the existence of a positive interrelationship between economic growth and the growth of the tourism industry, since an economic improvement allows the creation of favourable conditions for tourists and thus increases the number of tourists, tourist arrivals and revenue, which consequently promotes the economic growth of companies.

In this sense, the importance of studying macro and microeconomic factors for hotel performance is highlighted. Thus, the main objective of this study is to analyse the effects of variations in the economy and tourism on the performance of companies in the hospitality sector in Portugal. This study applies various business performance indicators to analyse the effect of economic and tourism variations in the financial performance of the hospitality sector. This study contributes to the literature on the tourism and hospitality industry by seeking to understand, evaluate and measure the effects of macro and microeconomic variables on competitiveness and corporate performance in the Portuguese hospitality sector. The company performance indicators included in this study are return on assets (ROA), return on equity (ROE), and an overall measure of company performance score (CP SCORE). Therefore, this study contributes to evaluating the effects of changes in the economy and tourism on the business performance of the hospitality sector, both from the perspective of impact on revenue and the variables of profitability and overall financial performance. The results of this study also contribute to empirical findings that will support strategic decisions in the hotel sector.

2. Literature review

In recent decades, business performance has been one of the research concepts studied in economic, business and management literature (Božič & Knežević Cvelbar, 2016). All management perspectives, philosophies and theories emphasise performance measurement as an essential part of the success of the management cycle or business processes (Altin *et al.*, 2018).

The growth and internationalisation of travel have increased the demand for accommodation. In this sense, the business environment in the hospitality industry is characterized by strong competition and constantly changing circumstances (Mitrović *et al.*, 2016).

According to Altin *et al.* (2018), the hotel and tourism industry has concrete specific characteristics, namely it presents a complexity of the service business, with characteristics such as the need for a large volume of investment in financial and human capital, specificity of service production processes, intangibility, the strong influence of location, great sensitivity to external economic, social, political and environmental factors. In turn, the diversity and specificity of hotels, imply that performance evaluation includes different types of services that can be offered by hotels. It is crucial consider that the hospitality industry has a high fixed cost structure, which means that the management and decision-making of these companies are very focussed and revenue-oriented.

Thus, the concept and operationalisation of performance are ambiguous in the context of business management and hotel management literature. Either due to the special characteristics of performance or its complex nature, multiple approaches to evaluation techniques and measurement of specific indicators arise in the context of the industry (Pnevmatikoudi & Stavrinoudis, 2016). According to the authors, performance and measurement are the main success factors for each tourism enterprise. As hotel performance is considered a complex and multidimensional concept, according to the same source, international literature suggests several different measures or indicators used for the scientific measurement of hotel performance.

In an overview of the literature on performance measurement in the hospitality sector, an increasing number of articles are identified that investigate the literature related to hotel performance measurement (Altin *et al.*, 2018; Sainaghi *et al.*, 2020, 2017, 2013; Pnevmatikoudi & Stavrinoudis, 2016; Sainaghi, 2011, 2010a, 2010b). According to the literature, business performance in the hospitality and tourism sector depends on a varied set of tangible and intangible factors, such as financial variables, structure, size, location, management typology, segmentation, innovation, human resources, service quality, among others. In addition to the various approaches and perspectives of analysis, these studies present various conclusions on competitiveness and entrepreneurship in the hotel and tourism sector. However, all authors argue that performance measurement in the tourism sector, especially in the hospitality industry, is an essential tool for effective management and decision-making.

According to Weerathunga *et al.* (2020), the performance of a hotel company is affected by several factors, not only by changes and macroeconomic cycles, political instability, market behaviour, terrorist attacks, environmental disasters and disease outbreaks, among others. According to the same author, guest revenues in hotel accommodation are directly related to the performance of the gross domestic product, in this sense, recessions have strong and lasting impacts on the performance of the hotel sector, generate strong reductions in demand and imply operational effects and from the point of view of development. On the other hand, situations of economic expansion generate an increase in the purchasing power of leisure and leisure customers and consequently generate an increase in demand for the hotel sector.

The hospitality industry is a strongly influenced by global challenges, economic, social and political changes, and in particular is highly vulnerable to threats posed by unexpected disasters such as epidemics, natural disasters and terrorist attacks (Chen, 2011). On the other hand, according to the author, the development of international tourism can have a doubly beneficial impact on performance. Since, from one perspective, there is a direct effect on hotel profits by increasing the hotel occupancy rate and sales and, from another perspective, an improvement in the economic context improves the development of international tourism and can therefore directly influence the development of the hotel industry.

According to Costa *et al.* (2020), a study aimed at determining the influence of intellectual capital and its components on the business performance of Portuguese tourism organizations, the authors concluded that the human capital efficiency coefficient, the capital employed efficiency coefficient positively influence the business performance of Portuguese tourism organizations, specifically the return on assets. Therefore, the study's conclusions support the concept that intellectual capital can become a new source of wealth in the Portuguese hotel and tourism sector, and that intellectual capital has a direct impact and positive effect on business performance.

Based on the importance of studying this topic and considering the literature review, in this study, the following hypotheses were proposed:

Hypothesis 1 (H1): Economic growth has a positive effect on the financial performance of the hospitality sector in Portugal.

Hypothesis 2 (H2): The tourism growth has a positive effect on the financial performance of hotels in Portugal.

Hypothesis 3 (H3): The age of companies has a positive correlation with the financial performance of hotels in Portugal.

Hypothesis 4 (H4): The financial performance of the hospitality sector in Portugal is influenced by the size of the companies.

Hypothesis 5 (H5): The financial performance of the hospitality sector in Portugal is influenced by its legal form.

Hypothesis 6 (H6): The financial performance of corporate hotels in Portugal is influenced by the tourist region in which the hotel is located.

3. Methodology

3.1 Sample and data collection

The empirical strategy of this study is based on key accounting data from financial reports published in the SABI database. The companies were selected based on available information, with companies being selected whose complete data on the accounting or financial variables under study is known, for eleven years, between 2011 and 2021. The period considered for the study covers eleven years, from 2011 to 2021. This period involves a series of decisive events in the world economy and the Portuguese economy. In particular, in 2011, the Portuguese economy had just suffered the shock of the 2008/2009 financial crisis and was preparing for another recession, which covered the years 2011, 2012 and 2013. In 2014, the Portuguese economy recovered and in 2018 it overcame two consecutive crises. In 2020 it is strongly influenced by the Covid-19 pandemic.

The sample is composed of a selection of active firms with the Classification of Economic Activities (CEA) 551 – Hotels and similar establishments, according to the Portuguese Classification of Economic Activities (CEA - Rev. 3). The sample of hotels, operating in Portugal between 2011-2022, was collected from Bureau van Dijk's SABI database in February 2023 (SABI, 2023). From an initial list of 5910, after excluding inactive firms and those with insufficient data, the final sample is an unbalanced panel of 1299 hotels, with 14289 observations. Data on macroeconomic variables was collected from World Bank statistics, specifically data on GDP, and the tourism industry, among others (The World Bank, 2023).

3.2 Corporate performance measures

This study evaluates the influence of variations in the economy and tourism on the business performance of the hospitality sector in Portugal and, as such, this study examines economic sustainability from the companies' financial perspective. There are several perspectives to measure and evaluate the corporate performance of a company, namely most studies used return on assets (ROA) and return on equity (ROE) (Chen, 2007a, 2007b, 2010; Weerathunga *et al.*, 2020).

Return on assets (ROA) is the return on invested assets or return on assets, reflects the efficiency of companies in the use of total assets, keeping constant the financing policy of companies and is a measure of profit per euro of assets:

$$ROA = \frac{\text{Net Profit}}{\text{Total Assets}} * 100\% \quad (1)$$

Return on Equity (ROE) represents the return to ordinary shareholders, i.e. the return on net assets invested and the return on equity. In this sense, it is defined as net income divided by total assets and is a measure of a company's efficiency in generating profits from each euro of equity invested:

$$ROE = \frac{\text{Net Profit}}{\text{Total Equity}} * 100\% \quad (2)$$

As previously mentioned, this present study includes a comprehensive corporate performance measurement variable, which allows the representation of the financial performance of hotels. Following the methodology previously applied by other authors, such as Chen (2010), from a set of indicators it was calculated the measure of *overall financial performance (CP SCORE)*. According to the same author, global financial performance incorporates a set of asset management measures such as total asset turnover, profitability, short-term liquidity and solvency.

According to Chen's (2010) applied methodology, two steps are required to calculate the corporate performance variable CP SCORE. This process has as its first step the selection of financial ratios to allow a comprehensive calculation of financial performance. In this study, the ratios of general liquidity, immediate liquidity, debt-to-equity ratio, financial autonomy, solvency, indebtedness, and asset turnover were considered. After selecting the variables we calculated the final comprehensive score based on principal component factor analysis with varimax rotation, which allowed the creation of composites of correlated variables from the original financial ratios. In this sense, it was possible, from the various financial ratios, to select and extract a set of simplified composite factors of the hospitality industry's performance, as calculated from the following functions:

$$CP\ SCORE_i = \sum_{i=1}^K W_i * S_i \quad (3)$$

where the variable $CP\ SCORE_i$ is the overall business performance score for the i -th hotel firm, S_i corresponds to the value of each factor of the i -th hotel firm and W_i is the weight or ratio of the variance explained by each factor divided by the variance explained by all factors:

$$W_i = (E_i / \sum_{i=1}^k E_i) * 100 \quad (4)$$

Where W_i is the weight of factor i , E_i is the variance explained by factor i and k is the number of factors.

3.3 Measures of macroeconomic variation and context variables specific to hotels

To consider the macroeconomic and microeconomic factors as well as their relative importance in the business performance of hotels in Portugal, this study includes the factors related to the variation of the economy, tourism growth, age of the companies, size, region where they are located and their legal form.

Changes in economic conditions strongly influence variations in tourism and hospitality. According to Chen (2010), the results of the literature and historical data conclude that a positive fluctuation in the economy causes an increase in company profits, and positively influences business performance in the hotel sector. In this regard, the initial hypothesis is that hotel performance is positively related to economic growth.

Gross Domestic Product (GDP) was taken as a proxy for the size of the total economy and the production of services. Therefore, real GDP growth allows us to represent economic changes. In this sense, the real GDP growth rate was calculated as follows:

$$\Delta GDP_t = \ln GDP_t / GDP_{t-1} \times 100\% \quad (5)$$

Tourism expansion increase the occupancy rate and earnings of the hospitality industry and, consequently, improve the financial performance of the hotel sector. According to Chen (2010), several empirical studies have shown that tourism expansion can boost economic development (Balaguer & Cantavella-Jordá, 2002; Dritsakis, 2004; Gunduz & Hatemi-J, 2005; Kim *et al.*, 2006) and that the improved economy caused by the expansion of tourism can increase the economic and financial results of hotels. As such, it is estimated that the growth in tourist arrivals has a favourable impact on the financial performance of hotel companies, thus we hypothesise a positive relationship between corporate performance and tourism growth.

To consider the variations in tourism, we applied the measure regarding the growth rate of foreign tourist arrivals, which represents the growth or expansion of tourism (Chen, 2010, 2007a, 2007b; Kim *et al.*, 2006). This measure is calculated as follows:

$$\Delta TA_t = \ln TA_t / TA_{t-1} \times 100\% \quad (6)$$

In addition to external factors, other factors internal to the industry influence the competitiveness of hotels. Besides the external factors, other factors internal to the industry influence the competitiveness of hotels. As internal factors were considered the variables age of the company (Age), size of the company (Size), its legal form (Legal Form) and region where it is headquartered (Region).

In the literature, some studies have analysed the effect of the size of hotels on their performance, however, there is no consensus regarding the effect of size on competitiveness in the hospitality sector. In this study, we analyse the hypothesis that hotel performance is significantly associated with hotel size. Regarding the age hotels, several studies have studied its influence on corporate performance. Similarly to the dimension, the studies present different results, so in the present study, we will analyse the hypothesis that the age of a hotel is significantly associated with its corporate performance.

The location of hotels influences their success, and the literature highlights that hotel must be well located. The location of the hotels influences their success, the literature highlights that it is essential that a hotel is well located, in this sense, we included in this study an additional variable, the tourist region of Portugal where the hotels are geographically based.

According to Weerathunga *et al.* (2020), in recent years the literature has studied data on corporate governance and studies have examined the effect of ownership dynamics on the performance of companies, in this sense we include in the present study the variable legal form of hotels to analyse the existence of influence on financial performance.

3.3 Models and panel regression

Given the objectives of this study, to investigate the impact of economic conditions and tourism growth on the business performance of hotel companies, this work uses a panel linear regression test with a panel consisting of a sample of 1299 hotels, with panel data observations for 11 years, from 2011 to 2021, with 14289 observations. we conducted panel regression tests.

To estimate the effects of economic variables on the Portuguese hotel industry and its corporate performance we estimated a macroeconomic model. As referred before, in the present study we apply performance metrics to capture different aspects of hotel financial performance, specifically: i) ROA, ii) ROE and iii) Corporate performance SCORE, in this sense, we repeat the macroeconomic model for each of these measures, as demonstrated in the equations 7 to 9.

$$ROA_{it} = \beta_0 + \beta_1 \Delta GDP_{it} + \beta_2 \Delta TA_{it} + \beta_3 SIZE_{it} + \beta_4 AGE_{it} + \beta_5 Legal\ Form_{it} + \beta_6 Region_{it} + \mu_i + \varepsilon_{it} \quad (7)$$

$$ROE_{it} = \beta_0 + \beta_1 \Delta GDP_{it} + \beta_2 \Delta TA_{it} + \beta_3 SIZE_{it} + \beta_4 AGE_{it} + \beta_5 Legal\ Form_{it} + \beta_6 Region_{it} + \mu_i + \varepsilon_{it} \quad (8)$$

$$CPSCORE = \beta_0 + \beta_1 \Delta GDP_{it} + \beta_2 \Delta TA_{it} + \beta_3 SIZE_{it} + \beta_4 AGE_{it} + \beta_5 Legal\ Form_{it} + \beta_6 Region_{it} + \mu_i + \varepsilon_{it} \quad (9)$$

where μ_i is the unobservable effect of each hotel unit, ε_{it} is the error for unit t at time i , i represent the firm and t represents the year.

According to the literature, the panel data linear regression test can be estimated using three methods, pooled ordinary least squares (OLS), the fixed effects method and the random effects method (Weerathunga *et al.*, 2020). According to the authors, the pooled OLS method estimates a common constant for all cross sections, and it does not consider differences between cross estimates. The difference between the fixed effects method and the random effects method is that the random effects method constants for each section are random parameters. In the present study, to analyse the appropriate model,

we performed a series of diagnostic tests. In this sense, the results of the F-test were used to decide between a fixed effect (FE) model or a pooled ordinary least squares model (POLS).

4. Data Analysis and results

4.1 Sample Characterization

According to the data, 51% (663) of the study companies sample belonged to the segment of economic activity of Hotels with restaurant (CEA 55111), followed by Hotels without restaurant (CEA 55121) with 10.5% of the companies (137), Holiday flats without restaurant (CEA 55123) with 7.3% (95). The remaining companies are distributed by the remaining economic activities under study (Table 1). The sample companies are mostly micro-enterprises, namely 688 micro-enterprises (52.5%), 469 small companies (35.8%), 140 medium-sized enterprises (10.7%) and only 14 large enterprises (1.1%). Only two companies under study are listed on the stock exchange.

Analysing the location, we concluded that the region with the highest number of hotels is Lisbon (4653; 32.3%), followed by the Algarve (2948; 20.5%), North (2893; 20.2%), Centre (1683; 11.7%), Madeira (1067; 7.4%), Alentejo (594; 4.1%), and Azores (572; 4.0%).

Table 1. Sample

Code	Description Classification of Economic Activities (CEA)	N	%
55111	Hotels with restaurant	663	51.0
55112	Guest houses with restaurant	37	2.8
55113	Inns with restaurant	22	1.7
55114	Lodging-houses with restaurant	3	0.2
55115	Motels with restaurant	8	0.6
55116	Apartment-hotels with restaurant	68	5.2
55117	Holiday villages with restaurant	47	3.6
55118	Holiday flats with restaurant	59	4.5
55119	Other hotels and similar establishments with restaurant	68	5.3
55121	Hotels without restaurant	137	10.5
55122	Guest houses without restaurant	31	2.4
55123	Holiday flats without restaurant	95	7.3
55124	Other hotels and similar establishments without restaurant	61	4.7
Total		1 299	100.0

N – number in 2019

Table 2 shows the number of people employed in accommodation in Portugal between 2011 and 2022, reflecting an average annual growth of 0.9% in the number of workers. It should be noted that the annual growth rate (Tk) of employees has varied over the years, with an increase in several years (2014; 2015; 2016; 2017; 2018; 2019) and a decrease in others (2012; 2013; 2020; 2021).

Table 2. Number of Employees in Accommodation in Portugal

Item	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
N	30688	29527	29324	30566	32581	34776	37096	39001	39783	34398	32733
Tk		-3.8%	-0.7%	4.2%	6.6%	6.7%	6.7%	5.1%	2.0%	-13.5%	-4.8%

N – number of employees; Tk - annual rate of growth.

4.2 Descriptive Statistics and Correlation Analysis

Table 3 summarises the statistics of ROA, ROE, Corporate Performance SCORE, Company age, Company size, ΔGDP and ΔTA over the entire sample period. The average (median) value of ROA is 2.41% (4.60%), allow us to conclude that during the period under study, there was a profitability of hotels in

Portugal. However, ROA shows a large variation, between a minimum of -15823.71% and 2662.79%, which means that some companies show higher results. The ROE variable follows the same trend, however, it shows even higher volatility. The variable Corporative Performance SCORE, which translates the overall performance of companies, presents values between -9.6 and 9.87, and presents lower standard deviation values, translating a lower variability among the general performance of tourism sector companies.

Between 2011 and 2021, the average growth in GDP (Δ PIB) in Portugal was 7.84% and the highest growth rate was 5.48% and the lowest was -8.30%. During the period under analysis, the periods most demarcated by economic crises in Portugal are a longer period between 2011 and 2013, demarcated by the Troika intervention and then the recession of 2020 resulting from the Covid-19 pandemic crisis. These crises also entailed an adverse impact on the tourism industry, in this sense, the change in tourism ranged from -62.51% to 48.40%, with an average growth rate of 7.84% during the period under study.

Table 3. Descriptive Statistics

	N	Minimum	Maximum	Mean	Median	Standard Deviation
ROA	14289	-15823.71	2662.79	2.41	4.60	185.61
ROE	14289	-104641.44	237381.25	31.47	11.57	2285.30
CP SCORE	14289	-9.60	9.87	.00	-.06	.45
AGE	14289	13.00	127.00	31.47	28.00	15.87
SIZE	14289	7.42	19.75	14.35	14.42	1.99
Δ GDP	14289	-8.30	5.48	.38	1.79	3.73
Δ TA	14289	-62.51	48.40	7.84	11.68	25.21

The following table 4 presents the average results of the variables per tourist region in Portugal. According to the data, we can conclude that the Alentejo hotels have on average a lower ROA and the Azores hotels had a higher average. As far as ROE is concerned, Alentejo is the region with the lowest average value and Madeira with the highest average value. The oldest hotels are located in Lisbon and Tagus Valley and the youngest are in the Azores. In terms of size, the hotels with the highest average are located in Madeira and the smallest in Alentejo.

Table 4. Descriptive Statistics of Variables by Region

Region	ROA	ROE	CP SCORE	AGE	SIZE
	Mean	Mean	Mean	Mean	Mean
Alentejo	-50.89	472.09	-.22	26.96	13.48
Algarve	6.86	16.14	.00	30.63	14.34
Centro	3.77	-2.15	-.04	29.11	13.84
Lisboa e Vale do Tejo	3.40	4.02	.02	35.33	14.67
Norte	3.83	25.09	-.04	29.78	13.87
Madeira	6.18	27.78	.22	30.69	15.42
Açores	7.75	18.20	.00	26.12	14.57

Considering the legal form, the hotels with the Foreign Company legal form show on average a higher ROA and ROE and, on the other hand, the hotels with the Anonymous society legal form show a lower ROA and Private Limited Company a lower average ROE (table 5).

Hotels with a higher average age have the legal form of Anonymous Society and hotels with a lower average age have the legal form of Foreign Company. In terms of size, the hotels with a higher average size are found with the legal form of Anonymous Society and the hotels with the legal form of Single Partner Limited Company present a lower size.

Table 5. Descriptive Statistics of Variables by Legal Form

Legal Form	ROA	ROE	CP SCORE	AGE	SIZE
	Mean	Mean	Mean	Mean	Mean
Foreign Company	8.21	64.00	-.02	21.73	14.24
Anonymous society	-1.99	34.29	.07	32.75	15.79
Private Limited Company	4.76	28.51	-.03	31.80	13.65
Single Partner Limited Company	2.12	40.13	-.04	23.37	13.56

To analyse the correlation between the variables, table 6 summarises the results of Spearman's correlation analysis. According to the results GDP growth (Δ GDP) has a positive and significant correlation with the ROA variable, a negative correlation, although not statistically significant and shows no correlation with the remaining variables. This implies that an improvement in economic conditions may contribute to an improvement in the return on assets (ROA) of hotels in Portugal. The variable tourism growth (Δ TA) also has a significant association with ROA and ROE and the growth of the economy (Δ GDP). ROA has a positive and statistically significant association with the variables CP SCORE, AGE, SIZE and the variables Δ GDP and Δ TA, as mentioned above. Therefore, the age of the companies positively influences the ROE and CP SCORE variables, although it shows a slight negative correlation with the ROE variable, although not statistically significant. The size of the hotels positively influences all variables, ROA, ROE, CP SCORE, although it does not show any correlation with the macroeconomic variables Δ GDP and Δ TA.

Table 6. Correlation Analysis

	ROA	ROE	CP SCORE	C AGE	C SIZE	Δ GDP	Δ TA	Legal Form	Region
ROA	1								
ROE	-.008	1							
CP SCORE	.264**	.003	1						
AGE	.016	-.001	.048**	1					
SIZE	.045**	.011	.315**	.089**	1				
Δ GDP	.025**	-.006	.000	.000	.000	1			
Δ TA	.021*	.004	.000	.000	.000	.824**	1		
Legal Form	.012	-.001	.083**	.003	.088**	.000	.000	1	
Region	.022**	-.014	-.095**	-.084**	-.443**	.000	.000	-.030**	1

** Significant at the 0.01 level.

* Significant at the 0.05 level.

4.3 Empirical Results

Following the literature, to validate which method is most appropriate for estimating the model, it was tested whether fixed effects, that is, considering different constants for each group, should be appropriate in the model before evaluating the validity of the fixed effects method (Chen, 2010; Weerathunga *et*

al., 2020). In this sense, we performed the F-test to determine whether the pooled OLS is more appropriate than the fixed effects model, considering as a null hypothesis the pooled OLS is more appropriate than the fixed effects model. According to the test results, if the F-statistic is greater than the critical value of the F test, we reject the null hypothesis, that is, the fixed effects method is more appropriate than the pooled OLS (table 7).

Table 7. F-test

Null hypothesis	F-statistic [p-value]	Test results
Regression Equation 7 (ROA)	10.428 [.0000]	Fixed effects
Regression Equation 8 (ROE)	1.588 [.146]	Pooled OLS
Regression Equation 9 (CP SCORE)	281.015 [.0000]	Fixed effects

According to Weerathunga *et al.* (2020), the literature argues that estimation by the method of moments (GMM) is considered more appropriate for studies with large N (firms) and small T (years), as is the case in the present study. In this study, to estimate all models the one-step GMM system was applied, as specified in equations 7, 8 and 9.

The results of the estimation of the F-test to model 7 allow us to conclude that there are statistically significant differences between groups for the variables region, legal form and size of the hotels, but no statistically significant differences were concluded in the variable age of the hotels (table 8). Regarding model 8 we can conclude that there are only statistically significant differences between the variable region, since for the remaining variables no statistically significant differences were concluded. Finally, in model 9 we conclude differences between groups in the variable region, legal form, firm age, and firm size.

Table 8. Tests of F of Fixed Effects

Source	Equations 7 (ROA)	Equations 8 (ROE)	Equations 9 (CP SCORE)
Region	7.828 (.000)	4.034 (.000)	35.536 (.000)
Legal Form	10.363 (.000)	.109 (.955)	23.303 (.000)
Firm age	1.522 (.217)	.005 (.943)	5.609 (.018)
Firm size	46.274 (.000)	3.280 (.070)	1276.269 (.000)
Δ GDP	2.816 (.093)	3.821 (.051)	.000 (1.000)
Δ TA	.000 (.985)	3.453 (.063)	.000 (1.000)

The results allow us to conclude that the variation in GDP has a positive effect on ROE, but has a negative effect on ROE and almost zero on CP SCORE, which only allows us to conclude that the variation in the economy has positive effects on the variable return on assets (ROA) of the hotels under study. In this sense, from the data obtained, we can conclude that the first hypothesis of this study (H₁) we can conclude that the variation of the economy has some impact on hotel performance. The negative effect of Δ GDP on ROE is partially inconsistent with the tourism literature (Chen, 2007a, 2010), despite presenting similar results those of the study by Weerathunga *et al.* (2020).

Regarding the effect of tourism, the results allow us to conclude that there is a positive effect on ROA, ROE, although the effect is only statistically significant at the 10% level in the second variable, however the effect of tourism is negative in CP SCORE. Thus, concerning the second hypothesis of this study (H₂), we can only conclude that growth has a statistically significant effect on ROE of the hospitality industry under study.

The results concerning hotel size show a positive effect in all models, and we can conclude that hotel size has a positive effect on ROA, ROE and hotel competitiveness variables. Results show that age positively influences ROA, ROE and CP SCORE, although results are only statistically significant for the CP SCORE variable, thus concluding the results of hypotheses 3 (H₃) and 4 (H₄). According to the literature, the impact of hotel age and size on performance has a certain limit as the profitability of a hotel reaches its optimal point at a certain age and then starts to decline (Aissa & Goaid, 2016; Weerathunga *et al.*, 2020).

As mentioned above, Alentejo hotels have lower ROA and ROE on average. In this sense, we can conclude that there is a positive relationship between ROA and the variables economic variation, tourism variation, size and age of the hotels, the region of Algarve, Centre and North of Portugal and the legal form of Private Limited Company (table 9 and figure 1). On the other hand, there is a negative relationship between ROA and the Alentejo, Lisbon and Madeira regions and the legal forms Foreign Company and Anonymous society. Given the results obtained, hypothesis 5 is verified, confirming the existence of the influence of the legal form on the competitiveness of hotels. Finally, regarding hypothesis 6, the results show that there are statistically significant differences in all variables, depending on the region where the hotels are located. The results are consistent with the literature, in which location affects the profitability of hotels since their services can only be consumed in a certain place and at a certain time (Lado-Sestayo *et al.*, 2016; Sainaghi, 2011).

Table 9. Regression Results of the Macroeconomic Model estimated: ROA

Parameter	Coefficient	t-statistics	p-value
Intercept	-83.529	-5.122	.000 *
ΔGDP	1.227	1.678	.093 ***
ΔTA	.002	.018	.985
Firm age	.124	1.234	.217
Firm size	6.243	6.803	.000 *
Region Alentejo	-52.355	-4.786	.000 *
Region Algarve	3.729	.437	.662
Region Centro	.921	.102	.919
Region Lisboa	-1.805	-.217	.828
Region Norte	.979	.115	.908
Region Madeira	-.364	-.038	.970
Region Açores	0 ^b	.	.
Foreign Company	-.418	-.023	.981
Anonymous society	-20.764	-2.991	.003 *
Private Limited Company	.785	.123	.902
Single Partner Limited Company	0 ^b	.	.

F-statistics [p-value] = 8.921 [.000] ***, R² = 0.066

*Significant at the 0.1 level.

**Significant at the 0.05 level.

***Significance at the 0.01 level.

In short, the results allow us to conclude that there is a positive relationship between ROE and the variation of the variables in tourism, the age of the companies and their size, the Alentejo region, the Algarve and the North and the legal form of Foreign Company (table 10 and figure 2). On the other hand, there is a negative relationship between ROE and the variation of the variable in the economy, the Centre region, Lisbon and Madeira and the legal form Anonymous Society and Private Limited Company.

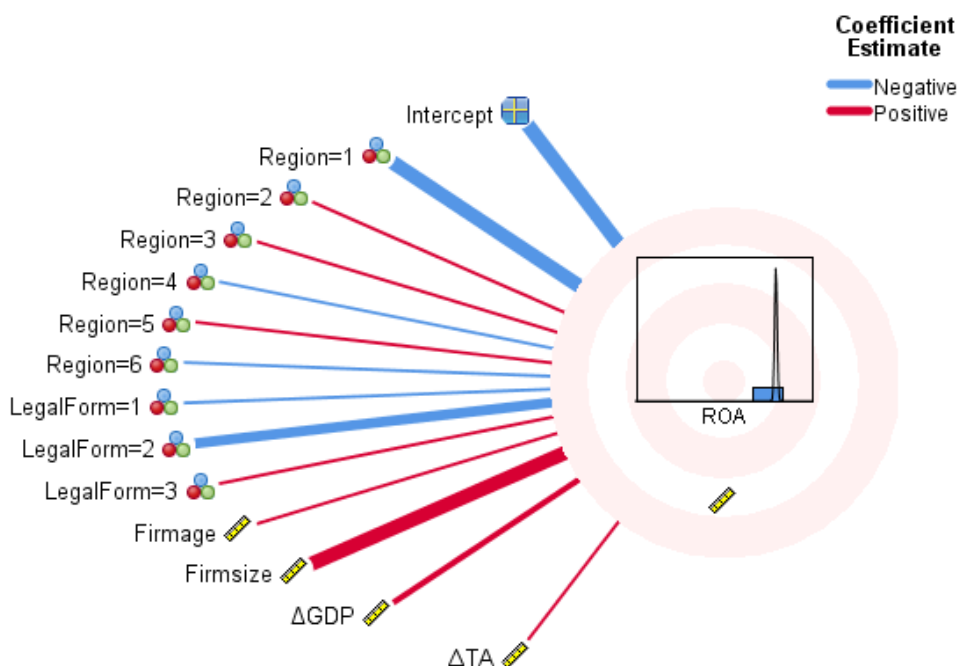


Figure 1. Results of Estimation of the Coefficients of the Macroeconomic Model: ROA

Table 10. Regression Results of the Macroeconomic Model estimated: ROE

Parameter	Coefficient	t-statistics	p-value
Intercept	-281.159	-1.396	.163
ΔGDP	-17.652	-1.955	.051*
ΔTA	2.484	1.858	.063*
Firm age	.089	.072	.943
Firm size	20.524	1.811	.070
Region Alentejo	474.932	3.516	.000***
Region Algarve	4.616	.044	.965
Region Centro	-5.626	-.051	.960
Region Lisboa	-14.029	-.137	.891
Region Norte	21.164	.201	.840
Region Madeira	-2.067	-.017	.986
Region Açores	0 ^b	.	.
Foreign Company	42.794	.194	.847
Anonymous society	-32.368	-.378	.706
Private Limited Company	-10.821	-.137	.891
Single Partner Limited Company	0 ^b	.	.

F-statistics [p-value] = 2.347 [.004]***, R² = 0.026

*Significant at the 0.1 level.

**Significant at the 0.05 level.

***Significance at the 0.01 level.

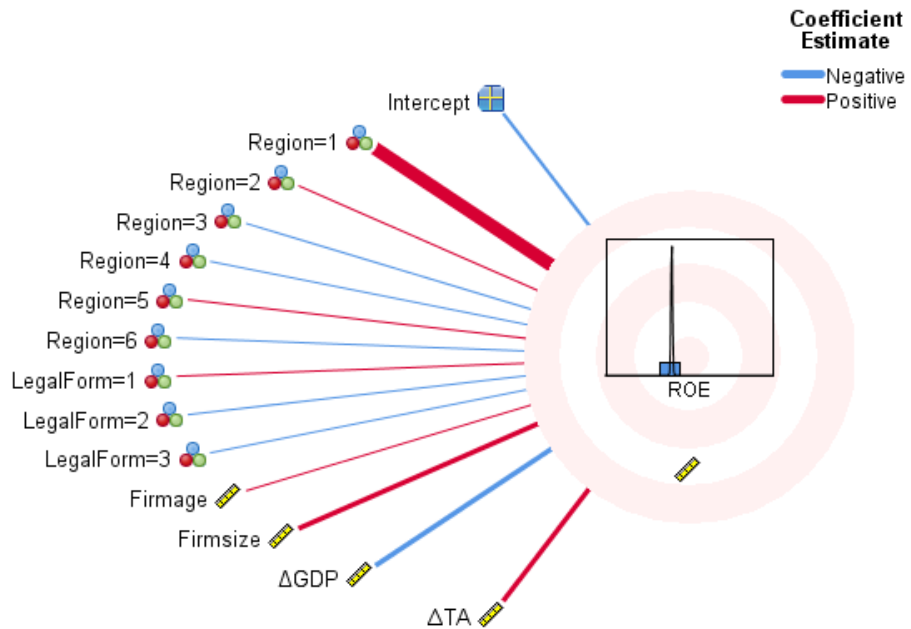


Figure 2. Results of Estimation of the Coefficients of the Macroeconomic Model: ROE

Regarding the macroeconomic model 9, the results show that the variable CP SCORE is positively influenced by the variation of the economy, the age and size of the hotels and the hotels located in the regions of Algarve, Centre, Lisbon, North and Madeira (table 11 and figure 3). On the other hand, the same variable has a negative relationship with the variable's variation in tourism, region of Alentejo and hotels with the legal form Foreign Company, Anonymous society and Private Limited Company.

Table 11. Regression Results of the Macroeconomic Model estimated: CP SCORE

Parameter	Coefficient	t-statistics	p-value
Intercept	-1.095	-29.213	.000***
ΔGDP	3.030E-20	.000	1.000
ΔTA	-4.604E-21	.000	1.000
Firm age	.001	2.368	.018**
Firm size	.075	35.725	.000***
Region Alentejo	-.136	-5.419	.000***
Region Algarve	.030	1.539	.124
Region Centro	.016	.765	.444
Region Lisboa	.024	1.235	.217
Region Norte	.017	.848	.397
Region Madeira	.176	7.904	.000***
Region Açores	0 ^b	.	.
Foreign Company	-.048	-1.168	.243
Anonymous society	-.079	-4.957	.000***
Private Limited Company	-.006	-3.84	.701
Single Partner Limited Company ^b		.	.

F-statistics [p-value] = 144.791 [.000]***, R² = 0.325

** Significant at the 0.05 level.

*** Significance at the 0.01 level.

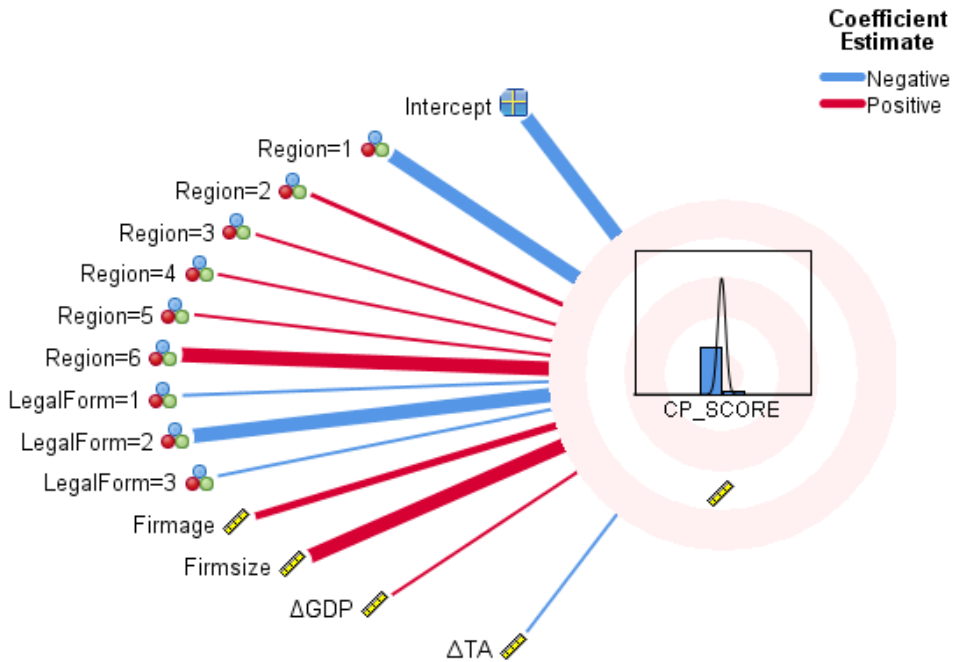


Figure 3. Results of Estimation of the Coefficients of the Macroeconomic Model: CP SCORE

5. Conclusion, discussion, and implications

5.1. Theoretical implications

The tourism and travel industry is sensitive to economic changes, the fluctuations of the economy influence tourism, which in turn influences the competitiveness of tourism businesses and consequently of economies and tourist destinations. In recent decades, tourism has expanded enormously worldwide, becoming one of the fastest-growing economic sectors. In a territorial context, tourism is often seen as an engine of economic growth, regional development and a contribution to increasing the economic well-being of local populations.

The hotel industry has a strong influence on the attractiveness and development of tourist destinations. The hospitality sector is an essential revenue base of the tourism sector, which is also heavily influenced by the fluctuations of the economy and all global trends and challenges.

In the Portuguese context, the growing importance of the tourism sector in the Portuguese economy makes it crucial to evaluate its financial results and performance and the competitive advantages of companies in the sector. Due to the importance of the development of hospitality and tourism, this study aims to investigate the impact of economic and tourism growth as well as company-specific and contextual factors on the business performance of the hotel industry.

The study is based on a sample of hotels in the Portuguese economy, specifically 1299 hotels, in which data were studied for an 11-year time series, between 2011 and 2021. The effects of economic changes were measured through the real growth rate of the gross domestic product (GDP) and the growth of tourism through the growth rate of total foreign tourist arrivals to the country. These effects were evaluated on financial performance indicators such as return on assets (ROA), return on equity (ROE), overall financial performance as measured by a comprehensive corporate performance score (CP SCORE), company age, company size, legal form and region where hotels are located. The methodology used applied panel regression tests to analyse the relationship between these variables under study.

Considering the estimated results, we can conclude that the results of the hypotheses established in this study, specifically for hypothesis 1, allow us to conclude that the growth of the Portuguese economy has a positive influence on the ROA variable and the business competitiveness variable of the hotels under study, although only statistically significant in the first variable and presents a negative effect on the ROE variable. For hypothesis 2 the results point to a positive effect of tourism growth on the profitability variables ROA and ROE, which is statistically significant only in the second variable and although it shows negative results on the variable CP SCORE, although not statistically significant. In this sense, the results of this study agree with those in the literature. As previously mentioned, much of the literature concludes that there is a positive interrelationship between economic growth and the growth of the tourism industry (Aissa & Goaid, 2016; Al-Najjar, 2014; Balaguer & Cantavella-Jordá, 2002; Chen, 2007c, 2010; Proença & Soukiazis, 2008; Sami & Muhamed, 2014; Weerathunga *et al.*, 2020). Thus, the results of the study indicate that the performance of a hotel company is affected by the gross domestic product, in the same line as the results in the literature (Chen, 2011; Weerathunga *et al.*, 2020). On the other hand, hotel performance influences economic growth, results similar to other studies in the literature (Balaguer & Cantavella-Jordá, 2002; Dritsakis, 2004; Gunduz & Hatemi-J, 2005; Kim *et al.*, 2006).

Regarding the age and size of the hotels under study, we can conclude that both have a positive effect on all variables of hotel competitiveness (ROA, ROE and CP SCORE), so we can conclude the results of hypotheses 3 and 4, in which the age and size of the hotels have a positive effect on their economic and financial results.

Regarding hypothesis 5, the existence of the influence of the legal form on the competitiveness of hotels, we can conclude that there are statistically significant differences between the groups, specifically in the ROA and CP SCORE variables. Finally, concerning hypothesis 6, the results show that there are statistically significant differences in all variables depending on the region where the hotels are located. Considering the results of the study, we can conclude that they appear in the same line as the results obtained in other studies in the literature (Aissa & Goaid, 2016; Al-Najjar, 2014; Balaguer & Cantavella-Jordá, 2002; Chen, 2007c, 2010; Proença & Soukiazis, 2008; Sami & Muhamed, 2014; Weerathunga *et al.*, 2020), namely the variables age, size, legal form of the hotels under study and the region where the hotels are located influence affect the variables of hotel competitiveness.

5.2. *Practical implications*

The results of this study suggest that macroeconomic factors may be only partially responsible for variations in the business performance of hotels. The results highlight that the microeconomic variables under study influence their economic and financial results.

The empirical results of this study outline a framework for future decisions by local and central governments, hotel owners, hotel managers and researchers. It also provides relevant information for making future investment decisions, since the results of the study conclude that the corporate performance of hotels is strongly influenced by macro and microeconomic variables, therefore geographic diversification strategies must be followed to influence the competitive advantages of the hotels. In this sense, the empirical results obtained in this study provide relevant information for the strategic definition of hotel planning.

5.3. *Limitations and future research directions*

Finally, this study has some limitations in its development. Specifically, the estimated economic models have limitations because not all variables that could be explanatory were considered, which translated into lower values of the estimated R-squared. In future work, we suggest the inclusion of other macro and microeconomic variables. On the other hand, given the importance of the subject under study, it is

suggested that future research study it in an international context, allowing comparative reflections between territories and analysis of the performance of the hospitality industry in different regions.

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