



Beyond the Plate: A Comparative Financial Ratio Analysis of Restaurants in Tourism Destinations and Regular Industry Before and After the COVID-19 Pandemic

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Abstract

This paper examines the financial ratio disparities between restaurants operating in tourist destinations and those in regular locations during times of crisis in Spain. The study compared seven different financial ratios. Those belonged to 13,518 Spanish restaurants working in tourism destinations and 12,634 more operating in regular Spanish locations. The study employed ANOVA analysis to test the hypotheses on each ratio, enabling us to compare the financial characteristics of restaurants in both tourist destinations and regular locations. The results of our analysis indicate significant variances in the financial performance of restaurant businesses in tourist destinations compared to those in regular locations during crisis times. Specifically, that restaurant in tourist destinations is at a significant disadvantage in terms of working capital per employee and income per employee. Moreover, the profit per employee was significantly reduced between restaurants in tourist destinations or regular locations when a major crisis, such as the COVID-19 pandemic, affected the restaurant industry. This study shed new insights on the existing financial literature by highlighting the distinct financial constraints faced by the restaurant industry. The current study presents a comprehensive analysis of the financial variances between these businesses and those operating in tourism destinations and in regular locations. The study analysed the data collected from the Spanish restaurants, resulting in limited generalisability of the findings. To boost the comparability of future research, it should include restaurant datasets from other countries.

Practical implications: Restaurant managers should keep extra financial slack when operating in a tourism destination.

Keywords: financial ratio, ANOVA, tourism destination, COVID-19, regular locations.

1. Theoretical rationale

Financial ratios have extensively been utilised among financial experts and investors to assess the economic health of enterprises (Elshaer et al., 2024a). Financial

ratios are one of the significant determinants of a business's success or failure (Maricica and Georgeta, 2012). They are crucial in assessing the restaurants' financial health (Kim and Ayoun, 2005).

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Moreover, it enables users to examine pertinent financial data to provide the decision-makers with crucial accounting information (Harsha Vardhan et al., 2017; Singh and Schmidgall, 2001). According to Maricica and Georgeta (2012), the quality of information produced by financial ratios contributes to the accuracy of bankruptcy prediction.

Financial ratio analysis serves as a crucial cornerstone of financial analysis across various industries (Kim and Ayoun, 2005). Surprisingly, the application of this technique in the restaurant industry has been limited, leaving ample room for exploration. The scarcity of studies on financial analysis within the restaurant industry has sparked interest in investigating this area further (Elshaer et al. 2024b). By delving into ratio analysis, we gain access to a remarkable analytical and diagnostic tool capable of unravelling the financial characteristics, differences, and similarities among restaurants in diverse destinations (Schmidgall and DeFranco, 2011). Indeed, the restaurant industry flourishes on its unique dynamics, rendering it an intriguing subject for financial scrutiny. Despite its indisputable significance, there persists a scarcity of studies analysing the financial ratios of this vibrant sector (Kim and Ayoun, 2005), especially with the COVID-19 crisis. This knowledge gap necessitates a comprehensive study to shed light on the implications and applicability of financial ratio analysis in the restaurant realm.

The hospitality business runs in a dynamic and rapidly changing environment; therefore, various barriers prevent relying on comparing the current ratios in the same period with previous years (Kim and Ayoun, 2005). It is difficult to determine if the variance between the ratios is appropriate or inappropriate. In Spain, restaurants require comprehensive management of financial knowledge and financial insights to effectively operate their businesses. The development of the restaurant industry in Spain has required

significant efforts in controlling financial aspects. According to Burgess (2007), hospitality managers need strong financial skills to achieve profitability, optimise costs, and increase revenues. However, according to the authors' knowledge, no evidence supports the differences in financial ratio figures among restaurants according to whether they are located in a tourism destination or regular location, particularly during the pandemic period. Thus, the current study aims to overcome the research gap in the restaurants' financial literature. Thus, restaurant owners hardly apply financial ratios to manage the business, especially in fine dining restaurants, since some of them require taking a risk to computerise their activities management. They feel that the cost is overrated as it will require other training (Burgess, 2007).

Various types of restaurants in different destinations serve different market sectors within the food service industry (Bakr et al., 2025). Therefore, can they also differ in terms of finance? The current study aims to conduct a financial ratio analysis across various restaurant business destinations to ascertain if there are any differences in financial ratios between the restaurants in tourism destinations and others in regular locations. The ultimate goal is to comprehend how each segment survived after the restaurants' shutdown. For that, it investigates the financial ratio analysis of each segment before and after the Covid-19 pandemic.

The researchers believe that financial analyses also contribute to the development of practical implications for decision-makers and restaurateurs to overcome the financial problem faced by the restaurant industry crisis, in addition to understanding the financial characteristics of restaurants in different tourism destinations and regular locations. Furthermore, it identifies potential investment opportunities and provides valuable information to investors (Borovčanin, 2015). In this vein, the

theoretical approach of this study is located within the contingency theory (Hamann, 2017; Reid and Smith, 2000). This theory essentially points out that there is no one-size-fits-all approach to managing a restaurant's financial performance. It argues that the effectiveness of financial strategies and ratios depends on various contextual factors, such as the restaurant's size, location, market segment, and competitive environment. In this concern, numerous studies show evidence that contingency theory can explain financial performance by providing complementary explanations, enhancing investment effectiveness, or improving management accounting research. For instance, valuable contributions have been disclosed within this theory, mainstreaming the conditions for effectively investing in working capital (Tingbani et al., 2020), predicting financial performance (Nasrallah & Qawasmeh, 2009), or reaching scholarly consensus among human relationship management practices and organisational performance (Elshaer et al., 2024c; Fouad et al., 2025; Tzabbar et al., 2017). There have been even attempts to match contingency theory with other explanative models, like the institutional fit, carried out successfully and showing that both theories interact when modelling firm performance (Volberda et al., 2012).

The current study used financial information for all restaurants in Spain listed on the SABI database, aiming to explore the evolution of the companies' potential risks, which, if inadequately managed, can lead to bankruptcy. This research aims to identify if there are significant differences in financial figures between restaurants operating in tourism destinations or regular locations and, if so, to what extent. Moreover, the research also compares these businesses' situation in 2020, under the COVID-19 crisis, and 2019, when the companies were recovering.

1.1 Literature Review

Performance measurement practices play a crucial role in successfully managing any business, as measurement is one of the essential aspects of the management process (Fouad, 2021). Moreover, more studies on performance measurement practices in the hospitality and restaurant industry need to be done (Shawky et al., 2019). Thus, the financial ratio analysis is considered the most appropriate and constructive tool to measure the financial performance of the hospitality industry, particularly the most minor operations, such as the restaurant industry (Haktanir & Harris, 2005). Any industry needs to set benchmarks, especially in small businesses, to compare itself to the industry to measure its performance. At the close of the financial year, the restaurants will assess their performance using the invaluable financial ratio information (Schmidgall & DeFranco, 2011). Financial ratio analysis is the most critical financial analysis technique for businesses, particularly for small businesses. Ratio analysis gives restaurateurs an immediate indication of their business trends, mainly whole industry trends (Schmidgall & DeFranco, 2011).

Financial ratio analysis expresses the proportional numerical relationships between figures reported in financial statements and is used to compare current period ratios to prior periods and industry averages (Schmidgall et al., 2000). It is worth noting that ratios consist of two corresponding numbers in a realistic, meaningful, and understandable manner divided by each other to give a meaningful value (Elshaer et al., 2024e). A ratio alone is simply a number, and it lacks whole meaning if not compared with the same ratio in the same industry and category; it must be comparable to a standard. For example, conducting an inventory ratio analysis of fast-food restaurants will give us valuable results when comparing firms to each other. Moreover, it will also allow us to compare each company's ratio to the standards of the fast food industry in the same financial period (Fathy, 2018). As for the overall firm's performance, financial ratios donot provide meaningful information if

considered isolated; instead, they need to be compared to standard figures to provide beneficial information to decision-makers (Fathy et al. 2024).

Consequently, thousands of financial ratios could be derived from financial documents such as balance sheets, income statements, and cash flow statements. Some of them, however, are usually seen as more significant and provide valuable information. The balance sheet and income statement are the most widely utilised sources for calculating financial ratios. As a result, financial ratio users attempt to categorise enormous financial ratios (Jin Kim, 2006). In this vein, Andrew and Schmidgall (1993) classified financial ratios into five categories based on the information type they provide for hospitality organisations. There are a) current liquidity ratios, b) long-term solvency ratios, c) profitability ratios, d) activity, and e) operating ratios.

This research applies to the restaurant industry from a financial perspective. It is characterised as a critical hospitality industry sector, providing millions of job opportunities and contributing hundreds of billions of dollars to the global economy (Fathy et al., 2025). As with any other business, restaurant performance can be measured by using financial ratios. Unfortunately, the restaurant industry is becoming increasingly exposed to natural catastrophes and pandemics, frequently leading to significant financial losses (Fathy, 2021; Kim et al., 2020; Michael Hall, 2010). Gössling, Scott, and Hall (2020) stated that the movement restrictions, social distancing, three months of lockdown, and international visitors' flow dropping to almost zero have caused the restaurant industry to be most significantly affected by the COVID-19 pandemic. Hall et al. (2020) stated that Spain was recorded as one of the most affected countries in the EU. Jafari, Özduran, and Saydam (2021) stated that business declined dramatically for many restaurants located in tourist destinations, which lost 100% of their customers, who are tourists, due to travel bans and border closures (Elshaer, Salem et al., 2025). On the contrary, the restaurants in regular locations, which

attract resident customers, were threatened by the social distancing policies, which reduced the capacity of restaurant tables by up to 40%. Nonetheless, because of the travel ban, the local restaurants were better positioned to overcome the crisis because residents often would rather have their meals in those already known restaurants, trusting them over those unknown (Fathy, Khalil & Fouad, 2025).

In this regard, numerous studies have been conducted to compare the financial ratios among various types of segments (Andrew & Schmidgall, 1993; Jin Kim, 2006; A. J. Singh & Schmidgall, 2001). In 2006, Kim conducted a study comparing two segments of hospitality hotels and restaurants; he tested if there were any differences among the financial ratios, such as liquidity ratios, activity ratios, solvency ratios, and profitability ratios (Jin Kim, 2006). The results proved that the hotel segment has greater liquidity and activity ratios than the restaurant segment. Nevertheless, the restaurant segment has solvency ratios better than the hotel to meet its long-term financial obligations. Profitability ratios, on the other hand, show no substantial variation between the two segments (Elshaer et al. 2024e). Ryu and Jang (2004) stated that casino hotels have significantly higher liquidity ratios than commercial hotels due to hotel type. In a similar approach, Kim and Ayoun employed financial ratio analysis to compare the hospitality sectors of hotels and motels, restaurants, amusement and recreational services, and airlines from 1997 to 2001. The results revealed that profitability ratios (ROA, ROE, and net profit margin) recorded the lowest for amusement and recreational services. They stated that the capital structure is unsteady due to the unstable external environment (Fathy et al., 2025; Kim & Ayoun, 2005).

Moreover, they employed inventory turnover, total assets turnover, and average collection period to measure asset management; their results proved that restaurants recorded a higher ratio than other hospitality sectors. Thus, it can manage its assets more efficiently than other hospitality sectors. In this vein, Diakomihalis (2011) proved significant differences in the

means of most financial ratios among all hotel categories in Greece, except gross profit margin and net profit margin.

In contrast, the comparative studies between the restaurant sectors were limited, especially before and during the Covid-19 pandemic. For example, Gu and McCool (1993) compared financial ratios to determine how the financial conditions and performances may differ according to the various restaurant industry segments. The study proved a significant variance in the solvency ratios due to the different long-term financing policies among the restaurants' segments and nearly significant differences in liquidity ratio due to no different short-term financing policies among the restaurants' segments (Elshaer et al., 2025a).

In this vein, the current research tries to conduct an in-depth and comprehensive comparison of the restaurant industry during the years 2019 and 2020 in Spain according to tourism activities. It has contributed to the financial literature and experimental restaurant industry knowledge.

Literature reviews in hospitality financial management have largely findings based on conventional financial ratios – that is, returns on equity, profit margin, and liquidity ratios – to evaluate the performance of a firm (Schmidgall, 1997; Kim, 2006). Although such ratios provide standardised parameters for the assessment of financial health, a substantial number of studies fail to address them critically in the context of their shortcomings in terms of their useability across different hospitality segments or in the case of external shocks, such as a pandemic.

To illustrate, Kim (2006) crossed the events to find out the effects of leverage on firm performance through cross-sectional analysis, where she used financial data of U.S. hotel firms. Although the research can be seen as methodologically sound in terms of its statistical investigations, it was largely set in a non-longitudinal manner, not taking into account the existing differences in the hospitality sector (e.g., between foodservice and lodging). In addition, the financial ratios

were mostly fixed and showed no reflection of labour productivity/operational efficiency, which is a highly important component in labour-intensive areas such as restaurants.

On the same note, Schmidgall and DeFranco (2004) did benchmarking on hotel chains in terms of financial ratios, where they placed emphasis on cost per employee and within departments. Although, they conducted an analysis that was mainly descriptive without any breakdown by type of market or by crisis situation. Those ratios were suitable as a form of internal benchmarking but less practical in being able to capture outside vulnerabilities or strengths, especially in times of a swiftly evolving landscape like the COVID-19 crisis.

More up-to-date studies (e.g., Singal, 2015; Elshaer et al., 2025b) started to take note of external shocks, such as economic downturns and health crises, but few tried to formalise the behaviour of financial ratios under the more volatile conditions. It is noteworthy that even pre-pandemic literature covered little on how geographical aspects such as reliance on foreign versus domestic customers would affect financial consequences amidst crisis.

In addition, most of the studies used aggregated financial analysis, where they approached the hospitality industry as a homogeneous industry where there is no distinction between fine dining, casual or fast-food restaurants or independent businesses and chain restaurants. This generalisation has incurred a knowledge vacuum concerning how firm characteristics and context-specific determinants (determinants within a specific location, like tourism dependence) influence financial resilience.

Conversely, the present research assumes a segmentation comparison methodology, and it draws the line between the restaurants functioning in the tourist destinations and the usual ones. This study is an insight regarding an aspect that is lacking in the literature: how the human capital performance measurements reflect the operation resilience during crisis by analysing the financial ratios based on

employees, e.g., the profit per employee or operating income per employee.

In such a way, our methodology is based on what was already developed in other studies but provides a more subtle, contingent, crisis-sensitive evaluation of financial performance in the restaurant sector. This prevailing outlook backs the use of contingency theory that states that external and situational variables influence the performance of organisations.

1.2 Economic context and tourism evolution within the time-lapse considered

According to the Euromonitor industry report (Euromonitor, 2022) presented in figure 1, the food service outlets in the Spanish market decreased by 10% by 2020 compared to 2019. Nonetheless, the highest drop occurred not in the number of outlets but in the market activity, estimating a decrease in transactions and sales of 40% and 41%, respectively. These two parameters recovered in the next year; nonetheless, the number of outlets still was significantly decreasing by the end of 2021.

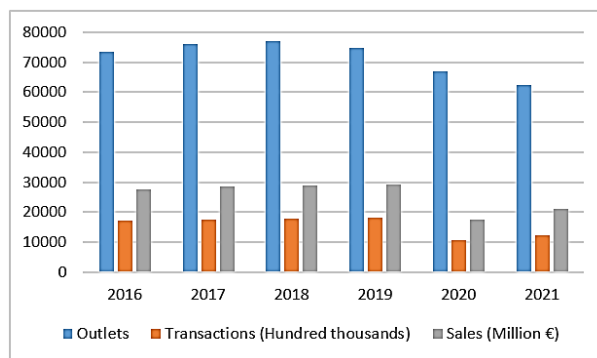


Fig. 1: Evolution of restaurant outlets, transactions and sales in Spain (2016 – 2021) Source: Euromonitor International (2022 industry report)

This evolution has already been confirmed by other studies, like the one issued by Statista (Statista Research Department, 2022), which pointed out that the decrease in sales, according to their sources, was from 37,39 million euros in 2019 to 21.89 million euros in 2020.

Regarding geographical distribution, the restaurants considered in this study were

mainly concentrated in Cataluña, Madrid, and Andalucía. Cantabria, Extremadura and La Rioja are the regions with fewer restaurants, not forgetting the autonomous cities of Ceuta and Melilla. The mean of each restaurant's assets for each region is displayed in the following table. It is calculated for 2019 along with its growth by 2020:

Table I: Geographical distribution of the restaurants in Spain.

Region	Number of restaurants	D	L	Mean total assets 2019	Change of the mean total assets by 2020 (%)
Cataluña	6379	2695	3684	516,720	-0,855
Madrid	5338	3321	2017	1,246,871	6,002
Andalucía	4590	2806	1784	440,682	3,220
Com.Valenciana	4057	1926	2131	340,849	8,146
Baleares	1781	731	1050	533,169	3,276
Canarias	1762	1097	665	534,323	4,441
Galicia	1473	680	793	359,008	0,269
País Vasco	1056	549	507	504,871	4,692
Castilla y León	1043	562	481	447,236	0,896
Castilla-La Mancha	870	302	568	363,418	4,458
Aragón	750	479	271	392,011	0,396
Murcia	677	362	315	426,231	5,914
Asturias	597	371	226	374,422	0,164
Navarra	316	121	195	703,279	3,680
Cantabria	307	113	194	360,613	-2,358
Extremadura	286	159	127	489,806	13,670
La Rioja	143	80	63	445,193	5,259
Ceuta	11	0	11	663,588	23,958
Melilla	10	0	10	324,360	1,135

Source: elaborated by the authors from SABI data

As stated, the companies change dramatically in size (measured as the total assets), ranking its mean between 324,360 euros in Melilla and 1,246,871 euros in Madrid. This effect might be due to the presence in Madrid of the headquarters of various restaurant chains. An outlier detection process was carried out to correct this effect, as described in the methodology part of the current study.

The behaviour in time of the international customers of these companies can be easily featured using the following graph, where it can be understood how the COVID-19 events affected the expenditure of tourists coming

from abroad. If, in the 2019 peak season, the international visitors' expenditure added up to almost 2 million euros (part of the general expenditure of 12 million euros) between April and June 2020, this income was virtually reduced to zero. The closure of the borders and the subsequent reluctance of tourists to visit restaurants because of the health precaution procedures drove the industry, especially the firms more dependent on the international visitors' flow, to a difficult situation, hard to manage financially without further aid.

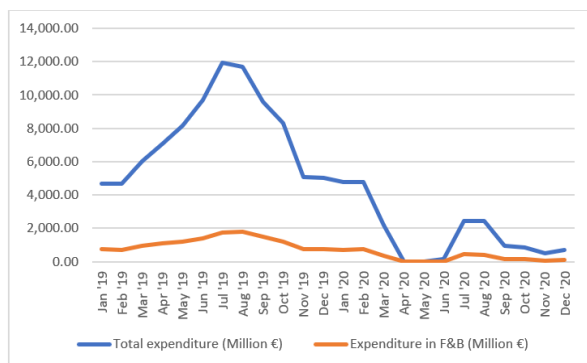


Fig. 2: Expenditure breakdown of international visitors in Spain in 2019 and 2020 Source: INE (Instituto Nacional de Estadística, gathered October 2022)

This trend of tourist expenditure had a parallel counterpart in the flow of arrivals itself. In the peak season of 2019, almost 4 million visitors travelled monthly to the 106 tourist destinations considered in the current study. Later, between May and June 2020, the number of international visitors dropped to zero. When the lockdown was over, the former figures did not recover immediately, leaving ample room in the industry for domestic tourists that could hardly replace the income lost.

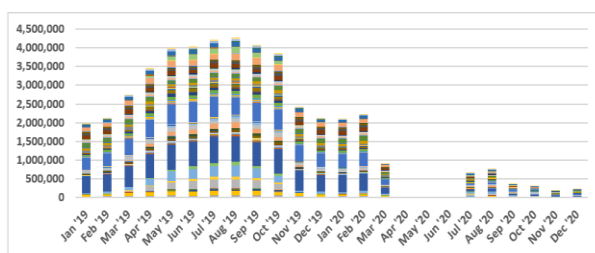


Fig. 3: Number of foreign visitors at the destinations considered in the study Source: INE (Instituto Nacional de Estadística, gathered October 2022)

This effect was not concentrated in specific destinations but spread throughout them. As the following maps feature, the decrease in visitors at the municipalities considered in the current study was distributed among them, considering as tourism destinations those municipalities where the tourist supply is significantly higher than the rest (Instituto Nacional de Estadística, 2022). In this vein, and within the scope of the current study, we considered the 106 destinations entitled by the Spanish Statistical Institute (INE).

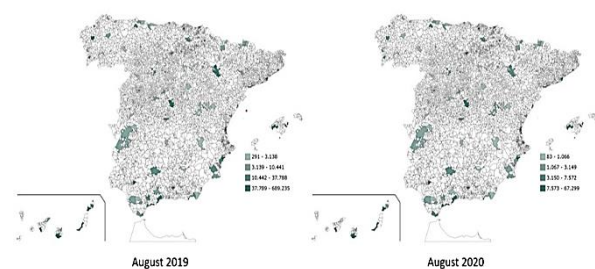


Fig. 4: Number of foreign visitors at the destinations considered in the study Source: INE (Instituto Nacional de Estadística, gathered October 2022)

1.3 Hypotheses

Traditionally scholars have focused on a limited list of ratios for determining a given firm's performance. These are typically related to three categories of measures included in the annual accounts, namely a) profitability, b) operations and c) structure. Nonetheless, a specific category is usually included along with those, considering several financial measures divided by the number of employees. This way, companies of different sizes can be compared on a compatible scale. This group of financial measures connects a company's performance with the number of employees hired. In this vein, we considered the following ratios: a) Profit per employee (PPE), b) operating income per employee (OIPE), c) staff cost by operating income (SCOI), d) average cost of employees (ACE), e) equity per employee (EPE), f) working capital per employee (WCPE), and g) total assets per employee (TAPE). Thus, the following statements summarise the hypotheses in this vein:

- H4.1. PPE is larger in those restaurants working in regular locations rather than tourism destinations. (Carreras-Simó, 2020; Watkins, 2014)
- H4.2. OIPE is larger in those restaurants working in regular locations rather than tourism destinations. (Ataullah et al., 2014; Ferrández et al., 2017; Iwasaki et al., 2010; Khare & Ishikura, 2020; Oliver, 2018; Onofrei & Lupu, 2015; Yu & Park, 2006)
- H4.3. SCOI is larger in those restaurants working in regular locations rather than tourism destinations. (Hadi et al., 2022; Martins, 2012; Samad et al., 2006; Sen & Haque, 2016)
- H4.4. ACE is larger in those restaurants working in regular locations rather than tourism destinations. (Klebanow & Eder, 1992; Sproat, 2009)
- H4.5. EPE is larger in those restaurants working in regular locations rather than tourism destinations. (Ahmad et al., 2021; Verhoef et al., 2021)
- H4.6. WCPE is larger in those restaurants working in regular locations rather than tourism destinations. (Gale, 1981; Zopounidis et al., 2020)
- H4.7. TAPE is larger in those restaurants working in regular locations rather than tourism destinations. (Tezi, 2009; Yong & Wilkinson, 1999)

These hypotheses refer to specific ratios in the next section and reference that support precedents on its use in preliminary analysis.

2.Method

Since the study's goal was to test whether a given restaurant's financial performance depends on whether it is operating in a tourist destination, it was necessary first to gather as much financial information about Spanish restaurants as possible. In this vein, the SABI database (Sistema de Analisis de Balances Ibericos, release 277, SW version 128.000, dataset update 2773) provided a list of 31.446 companies in Spain that were entitled to work under the reference 561 of the CNAE 2009 (Clasificación Nacional de Actividades Economicas 2009). CNAE 2009 is the national standard for classifying economic activities. It is compatible with the Eurostat NACE rev.2.

This, in turn, defines the 561 class as "the provision of food services to customers, whether they are served while seated or serve themselves from a display of items, whether they eat the prepared meals on the premises, take them out or have them delivered" (Eurostat, 2008). This classification allowed us to exclude similar companies (e.g. catering enterprises, bars or discotheques) from the dataset since they belong to class 562 in NACE and CNAE.

In the present research, a comparative quantitative design is used to investigate the comparative financial performance of Spanish restaurants in various geographical settings, that is, those that are tourism destinations on the one hand and regular locations on the other during the COVID-19 outbreak. The aim was to see considerable deviations in the major financial ratios and it looked into the deviations as indications of the levels of operational strength in the restaurant business.

2.1 Data Source and Sample Selection

Financial information utilized in the research came out of the Sistema de Analisis de Balances Ibericos (SABI) database (Release 277 SW version 128.000, dataset update 2773). It is a very well established and popular company-level financial database in Spain and Portugal containing standardized and proved financial data across industries. The first sample contained 31,446 of the registered Spanish enterprises that were categorized in the restaurant business activity according to the primary database indicators of 2019 and 2020. In order to make the analysis relevant and precise, a number of filtering processes was done: Only those companies were considered, where the financial information of recent years 2019 and 2020 is available and does not have any irregularities. Firms that had extreme outliers or were missing values with regard to critical financial ratios were excluded. Businesses, which satisfied the criterion that they were operational in at least two consecutive years (i.e., both before and during the pandemic) were only kept. As a result of the cleaning of the data, the final sample constituted 21, 660 restaurant businesses with

two categories depending on the municipality classification of the restaurant business and these were based on whether the business is located in officially recognized tourism destinations or just regular urban/non-touristic urban areas. The cross-reference against national geographic and tourism authority records was applied to this classification.

2.2 Financial Ratios and the Variables

Twenty-one financial ratios have been used. They were categorized into four broad ones: Profit Ratios (e.g. Return on Equity, Profit Margin) Operational Ratios (e.g. Asset Turnover, Stock Rotation) Structural Ratios (e.g. Solvency, Liquidity, Leverage).

The inclusion of less conventional “per employee” ratios was intentional to assess how labor-related financial performance varied across contexts—particularly in response to the crisis. This is crucial given the labor-intensive nature of the restaurant sector, especially in tourism-centric operations.

The municipality where every firm was operating was then marked as a destination or regular location, depending if it was entitled to be considered a destination according to the list of the Spanish Statistical Institute (INE) methodology (Instituto Nacional de Estadística, 2022). After it, and aiming to get a consolidated, stable dataset, we gathered four different datasets containing different data about each company, merging them in a unique matrix with the following parameters:

TableII: Variables considered in this study

Category	Name	Units	Description/Formula
Variables for identification and sizing	Reference	Number	Correlative number
	Name	Chain	Legal designation
	City	Chain	Municipality
	Province	Chain	Set of municipalities
	Region	Chain	Set of provinces
	(D)estination/(L)ocation	Binary	Binary variable
	Gross income*	'000 €	Revenue from all sources minus the firm's cost of goods sold
	EBITDA*	'000 €	Earnings before interest, taxes, depreciation, and amortisation
	Total asset*	'000 €	The sum of the book values of all assets owned by the firm. Net worth debt covenants
	Economic profitability*	%	Average performance obtained by a company as a result of its investments in assets
	Financial profitability*	%	Average profitability obtained by the company via its activity, using equity
Per employee (p.e.)	PPE*	'000 €	Pre-tax Result/Number of employees
	OIPE*	'000 €	Operating Income/ Number of employees
	SCOI*	%	(Staff Costs / Operating Income) x 100
	ACE*	'000 €	Staff Costs / Number of employees
	EPE*	'000 €	Equity/number of employees
	WCPE*	'000 €	Working Capital/ Number of employees
	TAPE*	'000 €	Total Assets/ Number of employees

Source: elaborated by the authors (* available for 2019 and 2020)

Going over the data and screening it in the preprocessing stage, we carried out a procedure for identifying outliers and excluding them from the analysis. For that, we calculated the anomaly index for each one of the 31.446 companies, considering the sizing variables: a) gross income (Corgel & Deroos, 1993; Habaragoda BS, 2018; (Jane) Hsu & (Shawn) Jang, 2008; Rodríguez et al., 2021; Savić et al., 2022), b) EBITDA (Bacik et al., 2020; Fathy et al., 2025a; Koh et al., 2013; S. Lee et al., 2011; Pieroni et al., 2013; Rubio et al., 2021; A. Singh, 2012; Youn et al., 2015), c) total assets (Fouad et al., 2024; Herdiyana et al., 2020; Y. H. Kim et al., 2013; Ko, 2020; Upneja & Dalbor, 2016; Wang et al., 2015), d) economic profitability (Ausloos et al., 2018; German-Soto & Sánchez-Hiza, 2021; Kalnins, 2006; Lucas & Ramires, 2022) and e) financial profitability (Camisón et al., 2016; Fathy et al., 2025; De Andrés et al., 2005; Fathy et al., 2025b; Hong Luan et al., 2013; Khalil & Fathy, E. 2017; Jae Lee & Jang, 2007; Park et al., 2017). After considering them all, we used the anomaly index node calculated by SPSS as the optimal classifier for detecting outliers. It was needed because it is an unsupervised tool (i.e., it does not require a training dataset). Furthermore, it has proved to be also convenient in multivariate contexts (Buda et al., 2017; Fathy and Fouad, 2022; Fathy et al., 2025b; Han & Kim, 2009; Jiang & Erdem, 2017; Makassy & Meng, 2020; Sania et al., 2015; Silitonga, 2021). Another reason is that the anomaly index can be calculated regardless of a specific target variable.

By this means, we could identify and exclude 5.294 companies matching an anomaly index higher than 2, meaning their deviation was at least twice the average. This filter left the dataset with 13.518 companies working in destinations and 12.634 firms in regular locations. The essential data from the sample is the following:

TableIII: Descriptive analysis of the filtered sample (sizing variables)

	2020 Gross income	2019 Gross income	2020 EBIT DA	2019 EBIT DA	2020 Total assets	2019 Total assets	2020 Economic profitability	2019 Economic profitability	2020 Financial profitability	2019 Financial profitability
Mean	394,50	644,48	-29,37	19,85	451,23	419,79	-33,86	-6,09	35,18	21,67
Std. Deviation	595,32	972,00	139,89	112,04	1003,47	947,94	1638,52	290,13	12319,69	606,03
Skewness	8,21	6,58	-19,49	3,70	9,82	9,53	-108,93	-58,63	144,42	3,22
Kurtosis	0,02	0,02	0,02	0,02	0,02	0,02	0,02	0,02	0,02	0,02
Minimum	132,46	73,07	893,81	68,71	162,33	152,33	13979,28	4695,97	21598,04	438,49
Maximum	0,03	0,03	0,03	0,03	0,03	0,03	0,03	0,03	0,03	0,03
Minimum	0,00	0,00	-8836,74	-1992,96	0,01	0,10	-217721,21	-27798,73	-181029,07	-21652,46
Maximum	17581,31	19369,13	1535,21	2058,92	28276,35	26389,70	50376,92	8065,03	1841465,21	21570,08

Source: elaborated by the authors

2.3 Data Analysis

One-way ANOVA was used to determine statistically insignificant differences in financial ratios of restaurants located in tourism destinations and those located in ordinary locations. Since this test was largely done in relation to the change of performance, this test was independently done in relation to FY 2019 (pre-pandemic) and 2020 (during the pandemic) to identify the financial impact of the COVID-19 pandemic. It is SPSS v.27 which was used to conduct all data analyses. Significance values were $p < 0.05$ and in Tables 4 and 5, the value showed in details.

After identifying a feasible set of companies, we conducted an ANOVA analysis to determine if the ratios could be significantly affected by the fact that the firm was working in a destination. Therefore, we fixed all the ratios available as main variables of analysis, setting as the factor to discriminate means between and within the groups the binary variable which identified the municipality as a destination or a regular location. The reason for choosing ANOVA analysis was mainly the variables' nature since we had a binary endogenous variable and several exogenous provided in scales. Moreover, ANOVA has been widely used in tourism studies, analysing relationships as the destinations' perceptions depending on the tourists' characteristics (Chen & Hsu, 2000), the role of motivation in the assessment of the destination (Devesa et al.,

2010), the stakeholders' perspectives in the destination (Semrad & Rivera, 2015), or the tourist satisfaction (Alanzeh et al., 2018). Moreover, and closer to the restaurants' scope, there have been several remarkable contributions using ANOVA techniques, like those applied to the customers' choice of restaurant (Y. S. Kim et al., 2010), the tourists' attitude towards the local gastronomy (Pérez Gálvez et al., 2017), or the different clusters of culinary customers in a destination (Wachyuni et al., 2021). By employing ANOVA analysis, we could identify those ratios that are significantly different in restaurants operating in destinations, especially with a shortage of international visitors, which should expose the companies more dependent on this segment.

3. Result

The analysis was carried out over the three categories of ratios, showing that the two presented significant differences in their means depending on whether the group was one of the tourist destinations or regular locations. Moreover, a third ratio stood out when it came to analysing the financial ratios of the restaurants in 2020, after every company in Spain had to shut down for three months because of the lockdown. Moreover, in 2020 the international flow of visitors dropped to the minimum level in decades, primarily affecting companies with the highest exposure to this market segment.

TableIV: Main results of ANOVA analysis

Ratio	2020				2019			
	Square sum	Quadratic mean	F	p-value	Square sum	Quadratic mean	F	p-value
PPE	7,90E+03	7,90E+03	27,808	0,000***	3,10E+02	3,10E+02	1,509	0,219
OIPE	1,47E+05	1,47E+05	55,101	0,000***	6,09E+04	6,09E+04	12,607	0,000***
SCOI	1,57E+07	1,57E+07	1,177	0,278	2,23E+05	2,23E+05	1,189	0,276
ACE	6,60E+02	6,60E+02	3,430	0,064	1,72E+03	1,72E+03	3,533	0,060
EPE	4,85E+03	4,85E+03	0,264	0,608	6,66E+02	6,66E+02	0,044	0,834
WCPE	1,30E+04	1,30E+04	12,831	0,000***	1,87E+04	1,87E+04	19,388	0,000***
TAPE	4,45E+04	4,45E+04	0,647	0,421	4,01E+03	4,01E+03	0,099	0,754

Source: elaborated by the authors (* significant <0.01)

After analyzing it, the differences could be better appreciated in the caption displayed in Figure 3, showing a clear and significant difference in means between the group of

companies that operate in tourist destinations and those which do not. The difference favors the latter since they perform much better than those set up at tourism destinations. The working capital per employee is larger in non-tourist restaurants and the income per employee in 2019 and 2020. As there are no significant differences in the working capital or the income, this circumstance indicates that restaurants in tourist destinations need more staff to operate.

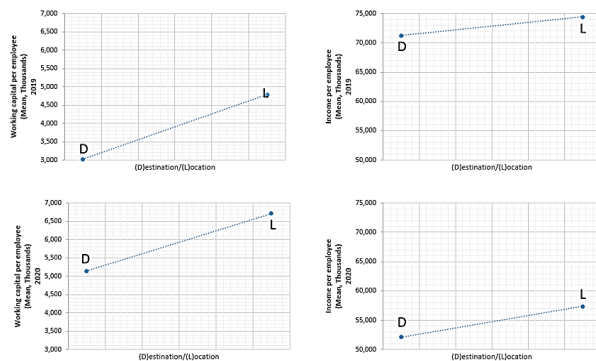


Fig. 4: Illustration of the mean differences in the ratios detected Source: elaborated by the authors

The third ratio that turned out to be significant in the dataset comprehending 2020 was the profit per employee. It could show that, in the absence of international visitors, the restaurants in tourist destinations are more affected than those in regular locations. This effect was possibly exacerbated by the COVID-19 crisis, which drove many customers to avoid visiting restaurants they were not used to, especially during their holidays.

4. Discussion

The current study analysed 21 financial ratios of restaurants in tourism destinations and regular locations for 2019 and 2020. The current findings summarised in table (5) showed significant profit-per-employee ratio differences among the different restaurant companies according to their location. This circumstance emerged only in 2020 due to the COVID-19 pandemic crisis, the shutdown of restaurants for four months, and the absence of international customers for restaurants in tourism destinations, but it was non-significant for 2019. Also, the profit per employee and the

operating income per employee significantly differ between the two restaurant segments for 2019 and 2020. Surprisingly, no differences were found in the standard financial ratios such as return on equity, return on capital employed, return on total assets, profit margin, total asset turnover, interest coverage, stock rotation, collection period, credit period, solvency, liquidity, financial autonomy, solvency coefficient, leverage, staff cost/operating income, the average cost of employees, equity per employee, and total assets per employee.

TableV: Main results of ANOVA analysis

	Ratio	Square Sum	DF	Quadratic Mean	F	P-Value
PPE (2020)	Between groups	7902.631	1	7902.631	27.808	0.000***
	Within groups	6068288.347	21353	284.189		
	Total	6076190.978	21354			
OIPE (2020)	Between groups	147332.343	1	147332.343	55.101	0.000***
	Within groups	57015117.243	21323	2673.879		
	Total	57162449.586	21324			
WCPE (2020)	Between groups	12979.760	1	12979.760	12.831	0.000***
	Within groups	21482291.617	21236	1011.598		
	Total	21495271.378	21237			
OIPE (2019)	Between groups	60883.155	1	60883.155	12.607	0.000***
	Within groups	117854984.544	24404	4829.331		
	Total	117915867.699	24405			
WCPE (2019)	Between groups	18706.439	1	18706.439	19.388	0.000***
	Within groups	23289371.138	24138	964.843		
	Total	23308077.577	24139			

Source: elaborated by the authors

During the analysis, we investigated uncommon ratios related to the number of employees (i.e., profit per employee, operating income per employee, staff cost/operating income, average cost of employees, equity per employee, working capital per employee, and total assets per employee). The results showed that "per employee" ratios, shown in table (2), partly have a significant difference -displayed in tables (4) and (5)- in value depending on the municipality where the restaurant operates (tourism destinations or regular location). A possible explanation for these results might be that the tourism industry is characterised as a labour-intensive one, particularly the restaurant activity, due to a higher proportion of employees' salaries and benefits costs in their financial structure.

Therefore, more and better-paid employees are needed to work in restaurants in tourism destinations. Consequently, these companies would need a higher income per employee to overcome the employees' salaries. With higher competition in the market, it is easy to understand that the income per employee would be higher in restaurants that operate in regular

locations (with a more stable, known demand) compared to those working in tourism destinations (Khalil & Fathy, 2017). The income-per-employee ratio is particularly beneficial for analysing businesses that operate in service industries. It is also vital for determining the efficiency and productivity of the business's employees and how it utilises its staff, letting them contribute to the business's growth. Moreover, it determines how the employees' salaries positively contribute to the business's profit. Generally, a higher income-per-employee ratio indicates a more productive and efficient business (Schmidgall & DeFranco, 2004).

There is also evidence of a lower working capital per employee in restaurants at destinations compared to non-tourism locations, in line with the conditions suggested by literature (Tingbani et al., 2020). As it seems with the income per employee, the reason for this is that more restaurant employees help dilute the enterprise's working capital. Since the working capital (or current capital) is a measure of the financial liquidity of the enterprise, the model proved that restaurants in tourism cities have a lower liquidity per employee than those in regular locations. The working capital is not only the net sum of the firm's banking accounts or the cash in the till. It also comprises raw materials, sums due to be collected, and intermediate goods. A significant difference in any of these parameters helps outline this effect. Because of the demand's lower seasonality, restaurants in regular locations can better foresee the need for goods and raw materials (Fathy, 2018). Henceforth, they can show a significantly increased working capital compared with the restaurants in tourism destinations, with a higher need for staff and more dependence on a more uncertain, seasonal demand. Another possible explanation is that restaurants in tourist destinations often aim to be upscale, providing a more sophisticated service that would require hiring qualified employees with higher salaries and benefits. In 2020, the activities of restaurants in tourist destinations stopped due to the borders' closure to international tourists. It limited the foreign demand for restaurants more in tourist

destinations than in regular locations. This constraint could explain the difference in the profit per employee, which became significant in 2020 but not in 2019. In other words, the profit in the tourism destinations' restaurants in 2020 divided by the number of employees was significantly lower than the profit per employee of those operating in regular locations. The effect of the international visitors' flow, withdrawing from the tourist destinations could be clearly stated in this figure. The restaurants in regular locations were much more profitable in 2020 because of keeping the locals engaged, who are likely to be more loyal customers.

5. Conclusion

In this paper, the authors made a significant contribution to the financial accounting literature on the restaurant industry that will generate a reasonable response and insight into the issue they discussed by focusing on the restaurant performance of the COVID-19 crisis and through financial ratio analysis. The major aim was to find out the financial indicators that best reflected the number of disparities between restaurants in tourism destinations and that in normal (non-touristic) areas in Spain.

Our comparison showed that three of the major finance ratios, such as profit per employee, operating revenue per employee, and working capital per employee were very distinct across the two kinds of restaurants, especially in the year 2020. These disparities were not constant throughout all the 21 ratios checked, implying that typical financial indicators might not reflect all vulnerabilities that occurred during external crises in a complete way. These results are also in line with the previous literature where the unequal effects of the COVID-19 pandemic are recorded on the tourism-dependent businesses (Elshaer et al., 2025b). The restaurant industry in tourism destinations witnessed a catastrophic loss in the volume of customers and revenue as international seclusion and lockdowns went into effect. Conversely, the restaurants whose main customers were the residents of the area also experienced more continuity and financial stability in terms of operation since those

people were more ready to revisit the familiar restaurants that followed the safety measures. The difference between the two groups in financial performance, particularly in terms of ratios related to labour, should demonstrate the significance of the location of a restaurant, stability of the customer base and efficiency of employees in times of crisis. This real-life case gave a helpful understanding of how an external shock could transform the finances of such players in the same industry. Thus, the research finds out that the financial ratios per employee can serve as very helpful diagnostic criteria and also as strategic indicators. These measures can assist in the work of the restaurant operators: Find sources of operational inefficiency; check both the productivity of labour and financial wellbeing; set up stronger financial forecasts; and derive specialised crisis-management and recovery plans depending on their work environment.

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