

# Investigation of the Effects of Covid-19 Pandemic on the Tourism Sector: Evidence from Greece\*

Efthalia Tabouratzi<sup>1</sup>, Konstantinos Vasilakakis<sup>2</sup>, Eleftherios Charamis<sup>1</sup>

<sup>1</sup>Department of Accounting and Finance, Laboratory of Accounting and Financial Management (LAFIM), Hellenic Mediterranean University, Heraclion, Greece

<sup>2</sup>Department of Economics and Sustainable Development, Harokopio University and Laboratory of Accounting and Financial Management (LAFIM), Hellenic Mediterranean University, Heraclion, Greece  
Email: tamthal@hmu.gr, kvasilakakis@yahoo.gr, elcharamis@yahoo.com

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## Abstract

The purpose of this paper is to theoretically study and investigate the economic impact on the tourism sector in order to draw useful conclusions on how much their overall operation was affected and to map how much they were affected after the Covid-19 period. The empirical research is characterized as a large-scale study that focuses on documenting the operational functions and activities of tourism enterprises in Greece with a focus on the island of Crete. The primary research was conducted using a questionnaire from which the findings were derived. The literature review which formed the basis of the theoretical approach to the topic and the research methodology. The originality of the research is that there is a large sample that answers (135 answers) how many the operational functions and activities of tourism enterprises were affected by the Covid-19 pandemic in Greece. This research requires the participation of tourism enterprises in Greece with the main limitations of the research being the time limitation of the completion of the survey and the geographical limitation in Greece. In addition, a limitation in conducting the survey was the reluctance of tourism business managers to respond to the survey due to confidentiality and privacy issues.

## Keywords

Tourism Sector, Enterprises, Economic Effect, Accounting, Cost Accounting Systems, Covid-19, Greece

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## 1. Introduction

This paper is survey research that focuses on the investigation of the effects of COVID-19 Pandemic on the tourism sector. Further emphasis is placed on business operations and decisions of tourism enterprises (cost systems) and how they were affected during the Covid-19 pandemic period.

Tourism has an economic impact on more than 135 sectors with its high multiplier effect, contributes to the balance of payments by generating foreign exchange inflows and stimulates many leading sectors such as transport, trade, construction and health.

Although a major global economic sector, tourism is very vulnerable to crises than any country or region of the world (Pforr & Hosie, 2008).

Negakis & Tachinakis (2013) expressed the need for adequate information for business in today's environment has led to the emergence of new techniques. Firms use quality management systems in order to meet customer needs and gain strategic advantage over competitors.

Moreover, tourism products cannot be stored for future sales like physical goods due to their perishable nature.

The outbreak of the Covid-19 pandemic changed the social and economic reality worldwide.

The Covid-19 pandemic has changed social and economic cohesion worldwide.

The rapid spread of Covid-19 also led to a high decline in all global tourism trends (Estrada et al., 2020).

The process of globalisation has been the main impetus for the development of the tourism industry in recent decades. Consequently, tourism is considered one of the most profitable and rapidly growing industries worldwide.

Tourism in a country is directly and indirectly connected with many sectors of its economy, therefore tourism development has a significant impact on the economic development of the country (Lyulyov et al., 2019).

The Covid-19 pandemic has led to millions of confirmed cases and deaths around the world and has affected people, communities, companies and organizations around the world (WHO, 2020).

As a result of the Covid-19 pandemic, the World Travel and Tourism Council has announced that millions of jobs in the global tourism sector may be at risk.

Previous pandemics have also exposed the tourism sector to major adverse shocks.

Campos et al. (2022) pointed out that the nineteenth century and the relatively recent Covid-19 pandemic, brought a rapid change in the application of management accounting systems and techniques, which has been considered vital to business success in the tourism sector however, the importance of practices differs significantly between different businesses and managers in this sector.

The main research question of this paper is to assess the impact of the Covid-19 pandemic on the tourism sector in terms of operational functions and how

the pandemic affected the activities and decisions of tourism firms during it.

The contribution of this paper is important because the recent Covid-19 crisis has had a major impact on the Greek tourism sector and internationally, while it focuses on the region of Crete, as a very popular destination in Greece.

## 2. Literature Review

Niewiadomski (2020) pointed out that the Covid-19 pandemic, due to the restrictions it caused on international travel, was the first major force that put the global tourism industry on hold. This is presented as a unique opportunity for the post-pandemic tourism industry to reinvent itself, driven by economic equity, environmental sustainability and sustainable development and away from widespread economic exploitation, environmental degradation and overpopulation. However, the transformation of the tourism industry can only be achieved after the end of the Covid-19 pandemic.

Sigala (2020) reported that the Covid-19 pandemic not only differs from other past crises, but that it may also have profound and long-term structural impacts on tourism as an activity and industry.

Mair (2020) also viewed the Covid-19 pandemic as a transformative opportunity, suggested that the tourism industry should not only aim to recover from the Covid-19 crisis, but also redefine and reform when economic and social stability is achieved.

Marron (2020) defined that the Covid-19 pandemic created the need for a strategy aimed at, accepting economic losses, protecting health, supporting income loss with subsidized programs and finally protecting the productive capacity of firms after the pandemic.

Zhang et al. (2021) pointed out the major impacts caused by Covid-19 on the tourism industry such as the decline in GDP.

Management accounting allows the control, the anticipation of problems, and the opening up of perspectives in companies this tool is very powerful in preparing accounting information to improve the company's costs, revenues, and results (Campos et al., 2022).

Gordon et al. (2021) pointed out that sustainable tourism can bring huge benefits to regional development when mass international tourism is drastically reduced in a pandemic period.

Many tourism enterprises, remained open despite severely diminished cash flows, which in many cases fell into the red and resulted in owners being unable to satisfy debt obligations. Hotel operations have fixed and variable components to their expense line items, with the latter tied to demand levels. From food costs and cost of goods sold to franchise and sales and marketing fees, hotel expenses vary greatly among different hotel types and locations.

Many of the traditionally fixed expense components will become more flexible in the future as hotel operators adjust to the "new normal" and learn (by necessity as a result of Covid-19) to operate more efficiently, with certain fixed ex-

penses morphing into variable expenses to aid the bottom line.

The Covid-19 pandemic has caused significant impacts and changes in all productive sectors and particularly in tourism as a whole. The measures implemented to deal with the virus were also geared towards mitigating the corresponding impacts on businesses (Kenny & Dutt, 2021).

### Impact of Covid-19 on Costing Systems in the Tourism Sector

Historically, two cost accounting systems, job order costing and process costing have been used to cost product and services and many companies continue to use these traditional costing systems (Briedley et al., 2001).

Zubac (2012) defined the necessity of applying accounting knowledge in the hotel industry as he explored the relationship between financial and managerial accounting.

In addition, Sorin & Carmen (2012) pointed out the importance and characteristics of costing systems in tourism enterprises.

ABC emerged in the late 1980s. In this technique, costs are accumulated per activity. This system is important because any company establishes a set of distinct activities that are interrelated. ABC takes a present and future view of costs and activity performance and is considered to be a system that enables cost management (Campos et al., 2022).

Since the mid-1980s, however, companies have been adopting activity-based costing (ABC) for products and customer costing (Briedley et al., 2001).

ABC diffusion in hospitality industry in Greece is considered very satisfactory. This research reported higher adoption rates than ones presented in previous studies in lodging industry (Tai, 2000).

However, the use of ABC in the hotel industry is minimal (Tai, 2000) with an informal survey by Graham (quoted in (Tai, 2000)) identifying no hotels in Europe to have adopted this approach. Tai interviewed a range of industry personnel in order to identify the reasons for this and found that, although there was considerable knowledge of the theory of ABC, there was a low understanding of how it might be used in a hotel context (Burgess & Bryant, 2001).

In the following pages, a global literature review of articles and research on the accounting and cost monitoring of tourism and hotel enterprises is presented.

Anderson & Young (1999) investigated associations between evaluations of activity-based costing (ABC) systems, contextual factors, and factors related to the ABC implementation process using interview and survey data from 21 field research sites of two firms.

Structural equation modeling is used to investigate the fit of a model of organizational change with the data. The results support the proposed model; however, the significance of specific factors is sensitive to the evaluation criterion. The model is stable across firms and respondents, but is sensitive to the maturity of the A.B.C. system. They united a theoretical literature that portrays ABC implementation as an organizational changed with an empirical literature that

documents correlate of ABC implementation outcomes but remains agnostic about the cause of these relations. The design of the research program distinguishes this studied from previous empirical work and provides the opportunity to explore more fully issues raised in prior studies.

Brignall et al. (1991) studied a hotel chain and determined three main considerations that shaped their product cost accounting practices 1) valuating stocks had the least significance for the tasks of cost accounting 2) calculating a full margin was used less than calculating a contribution margin and 3) cost planning and control focused on cost centers according to the functions of the organization, because the products are obviously not particular points for cost analysis.

Cost accounting literature suggests that firms that have adopted ABC systems have some characteristics, which distinguish them from companies that have not (Anderson & Young, 1999).

Innes et al. (2000) found that size influences the decision to adopt or reject ABC.

Faria et al. (2018) argued that hotel costing systems do not help businesses with information about their profits and Mashayekhi & Ara (2019) indirectly agreed that for proper implementation of costing in hotels, appropriate information is required.

Tabouratzi, Vasilakakis, & Charamis (2022) presented costing tools and techniques used by hotels in their products and services. The financial resources were highly affected by the Covid-19 pandemic (almost 70%) and the total revenue, in a very high percentage (almost 94%).

### 3. Purpose of Research

The purpose of this paper, research, is to theoretically study and investigate the impact of COVID-19 on a number of potential impacts identified in companies belonging to the tourism sector, categorized in the 3 channels “Accommodation”, “Food service (food supply/restaurants)” and all “other tourism-related sectors”.

### 4. Research Methodology

This section presents the methodological framework, the research approach and the design of the research together with the research tool, according to the research objectives of the present work. Also, the research methodology of the present empirical research includes data collection, processing, analyzing and drawing conclusions.

The empirical research is characterized as medium-scale and focuses on investigating the effects of Covid-19 on a range of potential impacts identified in Crete, the largest island in Greece.

Specifically, the method of simple random sampling (probability sampling) was chosen in this research.

Therefore, the research problem that arises concerns the investigation of the effects of Covid-19 on a number of potential impacts identified in Crete, the largest island in Greece.

## The Questionnaire

This paper is a review study focused on investigating the effects of Covid-19 on a number of potential impacts identified in Crete, the largest island in Greece.

It aims to measure variables or factors of a conceptual framework/model and to represent the relationships between these variables.

In this study, the questions were closed-ended, and wanted to explore the significance of the impact of Covid-19 in terms of increasing the cost of purchasing goods/supplies, loan repayment, rent payments, salary payments, liquidity, collectability of receivables and fulfillment of obligations (with suppliers/creditors), and meeting operating expenditure needs.

The types of questions used in the questionnaire are multiple options dichotomous and scale (Likert type).

The ethical rules (data protection) on anonymity and confidentiality apply to the questionnaire used.

## 5. Results

### 5.1. The Profile of the Sample

The current research has selected as data pool, 3 sectors of Tourism which could be characterized as fundamental and representative for tourism's performance and also providing the most crucial products and services related to this market (i.e., Tourism).

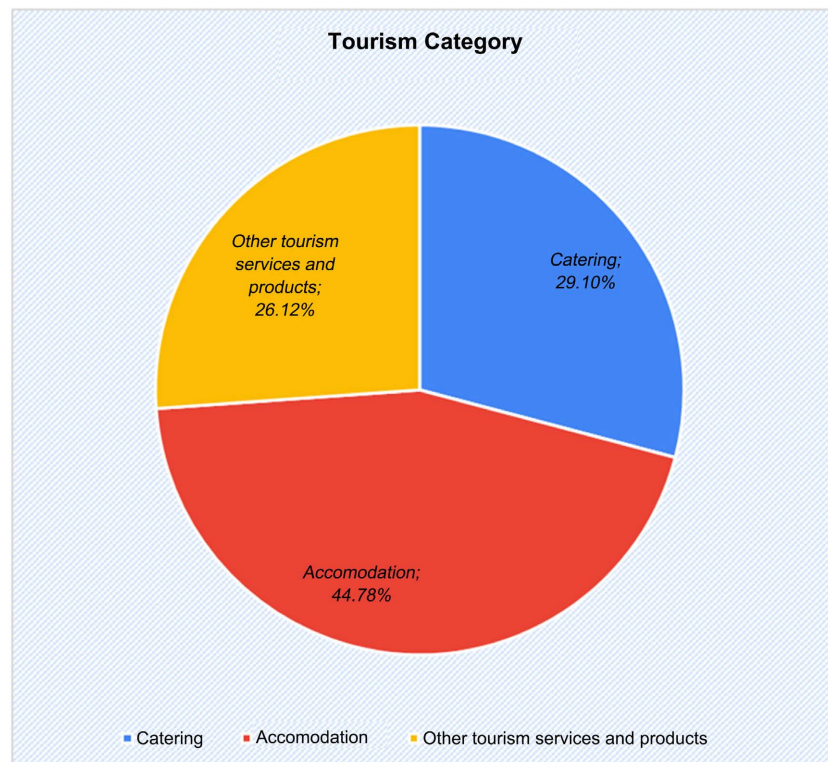
First of all, our sample consists 135 companies allocated in the sector of Catering (i.e., Restaurants, food supplies etc.), in the sector of accommodation (hospitality sectors, mainly hotels, but also pensions, apartments for rent, etc.) and finally all the other types of products and services which could not be included in the other 2 sectors (e.g., travelling agents, souvenir shops, etc.). The sample represented over 15% of the total enterprises.

The quantitative analysis of the above categorization is stated in **Figure 1** as below.

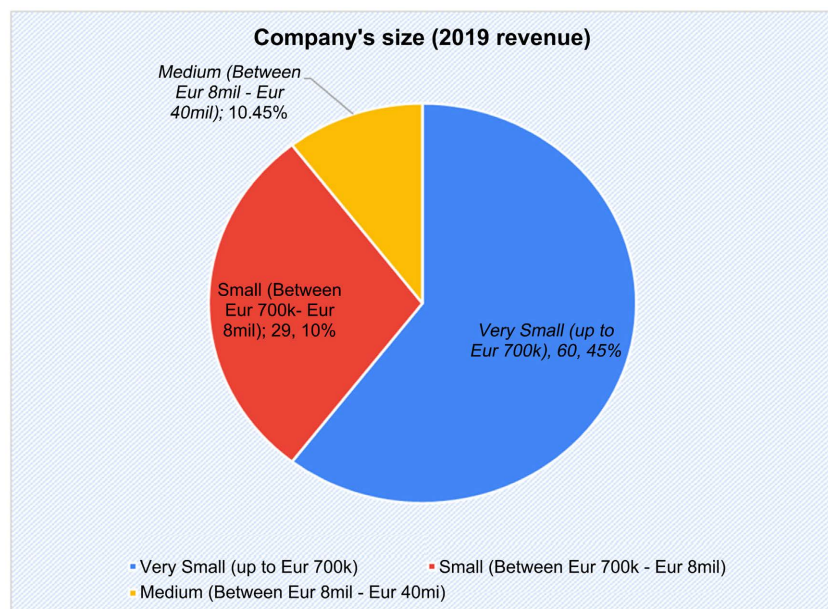
Moreover, another characteristic of our sample is the size of the company responding in our survey. This second categorization divides our sample based on the annual revenue for the fiscal year 2019. Companies with annual revenue below Eur 700 k are characterized as very small, companies with annual revenue between Eur 700 k and Eur 8 mil. Are characterized as small and companies with annual revenue between Eur 8 mil. Up to Eur 40 mil. are characterized as medium size.

The quantitative analysis of the above categorization is stated in **Figure 2** as below.





**Figure 1.** Tourism category.



**Figure 2.** Company's size.

## 5.2. Important Findings

Moving our research forward, we demonstrate the research questions as following, based on the following categories.

CATEGORY 1:

First of all, we investigated, for a number of indicators, the level of impact in the companies of our sample. The respective research questions are demonstrated as following:

ID 1: Increase in the cost of purchasing goods/supplies.

ID 2: Difficulties (or inability) in loan repayments.

ID 3: Difficulties (or inability) in payment of rent installments.

ID 4: Difficulties (or inability) in wage payments.

ID 5: Liquidity issues (Cash reserves).

ID 6: Collectibility of receivables.

ID 7: Inability of meeting liabilities (with suppliers/creditors).

ID 8: Inability of meeting operating expenses' needs.

The suggested responses have been classified to a scale of 1 to 5, interpreted as below:

1: Not significant

2: Minor impact

3: Quite significant

4: Important

5: Critical

This evaluation on the quality characteristics of the sample is presented on the following **Table 1**:

As we can see from the above **Table 1**, although it can be observed a significant level of dispersion in the answers of our questions, which could be explained by the fact that we have a variety in the nature of the respondents [variety based on tourism sector (**Figure 1**) and variety based on company's size (**Figure 2**)], nevertheless, the standard deviation levels have a small range with min. at 1.121 and max. at 1.419. Similar trend in the coefficient of variation levels, ranging from 31.95% to 46.01%, thus showing a consistency in the answers.

Based on the above, the quality of our results could be characterized as relatively consistent and reliable.

Analyzing further our descriptive statistics, we see that for Q2, Q5 and Q6 the mode (answer more frequently responded) is at 5 ("critical" level), thus indicating that, "*Difficulties (or inability) in loan repayments*", "*liquidity issues*" and "*collectability problems*", where the consequences, most severely affected the tourism sector.

Moreover, this conclusion is supported from the fact that the last two of them (i.e., "*liquidity issues*" and "*collectability problems*") exhibit a median of 4.

On the other hand, the observation that other potential pandemic consequences, such as "payment of rent installments" and "wage payment" exhibit lower frequency and severance values, could be attributed to the fact that companies in Greece received State's support in the mentioned liability areas (i.e. rent relief for some months and contribution to the wage payments) and also to the fact that tourism sector gave a strong effort to stay viable, by retaining those two important expense lines on a functional and operating level.

A quantitative analysis of the above statistics is presented in the below **Table 2**:



In a second stage, we attempt to correlate the effects (consequences) of the pandemic (i.e., the above three calculated as most significant) with the “tourism category” and also with the “company’s size”, by using statistical regression in order to assess the level of relationship for the variables under question.

In the following **Table 3** we test the relationship between Tourism Category and the three significant consequences and in **Table 4** we test the relationship between “Company’s size” and the three significant consequences, too.

**Table 1.** Quality characteristics of the sample results.

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
Mean	3.358	3.312	2.785	2.982	3.770	3.455	3.299	3.376
Standard Error	0.102	0.136	0.124	0.112	0.109	0.124	0.111	0.117
Median	3	3	3	3	4	4	3	3
Mode	3	5	3	3	5	5	3	3
Standard Deviation	1.121	1.419	1.281	1.173	1.205	1.297	1.205	1.312
Sample Variance	1.257	2.013	1.642	1.376	1.451	1.681	1.453	1.720
Range	4	4	4	4	4	4	4	4
Minimum	1	1	1	1	1	1	1	1
Maximum	5	5	5	5	5	5	5	5
Sum	403	361	298	328	460	380	386	422
Count	120	109	107	110	122	110	117	125
Coef. of Variation	33.39%	42.84%	46.01%	39.34%	31.95%	37.54%	36.53%	38.85%

**Table 2.** Quantitative analysis of the mostly impacting consequences.

	Difficulties (or inability) in loan repayments	Liquidity issues (Cash reserves)	Collectability of receivables
Not significant (1)	15.60%	5.74%	9.09%
Minor impact (2)	12.84%	9.84%	15.45%
Quite significant (3)	25.69%	22.13%	24.55%
Important (4)	16.51%	26.23%	22.73%
Critical (5)	29.36%	36.07%	28.18%

**Table 3.** Relationship between “Tourism Category” and mostly impacting consequences.

Relationship between “Tourism Category” and mostly impacting consequences			
	Difficulties (or inability) in loan repayments.	Liquidity issues (Cash reserves).	Collectability of receivables.
Multiple R	0.021	0.076	0.134
R Square	0.004	0.006	0.018
Adjusted R Square	−0.007	−0.002	0.011
Standard Error	1.046	1.072	0.950

**Table 4.** Relationship between “Company’s size” and mostly impacting consequences.

Relationship between “Company’s size” and mostly impacting consequences			
	Difficulties (or inability) in loan repayments.	Liquidity issues (Cash reserves).	Collectability of receivables.
Multiple R	0.334	0.702	0.631
R Square	0.112	0.493	0.398
Adjusted R Square	0.105	0.489	0.394
Standard Error	0.986	0.766	0.743

As we can see from the above there is a significant relationship between “Company’s size” and the three important consequences from the pandemic, especially in “liquidity issues” and “collectability of receivables” as we observe levels of R squared approximately of 49.3% and 39.8%.

On the other hand, no significant relationship could be validated for relating “Tourism category” and the three important consequences.

Those conclusions were anticipated, bearing in mind that company’s size is closely related to its working capital abilities and moreover to its overall sustainability, in the most of the cases, while the tourism category (i.e., accommodation, restaurant/catering or other) does not necessarily imply a crucial criterion for its viability, while the “tourism category” itself exhibits large variation in the size of the sample items in each category (e.g. in accommodation category).

## 6. Discussion

The present paper attempts to investigate the effects of Covid-19 pandemic to a number of potential consequences identified. In our sample we collected responses from companies belonging in the tourism sector, categorized in the 3 channels of “Accommodation”, “Catering (food supplies/restaurants)” and all the “other sectors related to tourism”.

For a number of eight potential effects (consequences) we investigated the frequency and also the severance of them, to the respondents of our sample, thus identifying the three more crucial of them.

Finally, we attempted to correlate and investigate the level of linear relationship between the two characteristics of our sample (i.e., “Tourism sector” and “Company’s size”) with the identified three most severe pandemic effects.

The results showed, that regardless the specific nature of tourism service (i.e., Accommodation, catering or other) the effects of pandemic were severe, particularly in the areas of “loan repayment”, “liquidity” and in the “collectability of receivables” which could be attributed to the severe finance problems caused of the pandemic and of course to the cash shortage in the available income for holiday spending in the tourism related companies. On the other hand, the effects were minimum in areas such as “payment of rent installments” and “wage payment” as the companies in Greece received State’s support in those areas (i.e., rent

relief for some months and contribution to the wage payments), through immediate legal intervention acts and also to the fact that tourism sector companies tried to retain their staff and buildings in order to be ready for the recovery.

## 7. Limitations and Further Research

The current research focused on investigating the effects of the pandemic on the tourism sector.

Suggestions for further research would be to move the concept to a second step, by investigating which ones from the State's legal intervention acts (aid measures) are considered to assist the most in the tourism sector companies' viability.

Moreover, it would be interesting to investigate what other measures (which were not offered by the Greek State) could be suggested as important in order to support and assist the recovery of the tourism sector, not only in the current situation, but also in potential crises of the future.

## Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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