



Investigation of applied costing systems in the hotel industry during the COVID-19 pandemic: Evidence of Greece

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Abstract

The purpose of this paper is the theoretical study and investigation of the needed cost-effective business systems to export useful conclusions on whether they apply, how, what kind and how they carry for this cost in their overall functioning and to become a mapping whether they were affected on the after Covid-19 era. Empirical research is characterized as a large extent that focuses on recording the implemented cost-effective systems from tourist (hotel) companies in Greece. Primary data was used using a questionnaire on which conclusions were based. Secondary data from the bibliographic review was also used, which formed the basis in which the theoretical approach to the subject was developed and the corresponding research methodology. The originality of the survey shows that there is no analysis of responses to such a large sample that compares if they apply, how, what kind and how they carry for this cost in their overall function and whether hotel business has been affected by Covid-19 Greece in terms of costing services and products. This survey requires the participation of hotel businesses in Greece or not a cost system, key research restrictions is the time limitation of research completion and geographic restriction in Greece. In addition, a restriction on the conduct of research was hesitant and several times the reluctance of many hotel businesses to respond to research due to confidentiality and protection of personal data.

1. Introduction

This paper is survey research that focuses on the investigation of the costing systems applied by tourism (hotel) companies in Greece.

The investigation of the applied costing systems can be performed with the appropriate tools. The tools help to collect, analyze and process data more efficiently in order to conduct proper conclusions (Saunders, 1994).

The use of questionnaire is the most popular method of data collection. The questionnaire offers quantitative data, through coding the answers to the questions, the researcher can be absent and it is easier to process the results (Cohen, Manion, & Morrison, 2008). The main requirement is the correct definition of the concepts (variables/factors) (Karagiorgos, 2002). In the empirical research, the questionnaire was designed with a specific structure according to the research objectives. The questionnaire as a research tool is considered the most widely used quantitative data collection technique (Nova - Kaltsouni, 2006). It aims to measure variables or factors of a conceptual framework/model, and to correlate these variables.

Specialized accounting for hotel companies as a sub-branch of general accounting has been the subject of many researches, studies and articles both in Greece and abroad due to its particularities (Asvesta & Petropoulou, 2009).

We analyze the conclusions of some researches, studies and articles that have been carried out in recent years both in Greece and abroad with the main subject of the accounting use and cost monitoring of hotel companies. Downie (1997) argued that knowledge development is required in order to maximize the resources available for the management of hotel businesses. The development of accounting information to support marketing decisions in hotels, he pointed out, offers opportunities to improve the strategic decisions made. The available technology is capable of producing information that previously was not so easy.

Mia and Patiar (2001) focused their research on luxury hotels in Australia, studying the use of accounting methods by managers. They investigated, which financial and non-financial performance indicators managers emphasize, assessing the performance of individual departments in hotel operations. They further assessed managers' satisfaction with the details and availability of their hotels' accounting management systems. The results show that management makes use of management accounting systems for both short- and long-term decision making. General managers, compared to department heads, were found to be more satisfied with the frequency with which accounting systems are available to them, and showed a greater emphasis on financial performance indicators.

Makrigiannakis and Soteriades (2007) dealt with management accounting practices in Greek hotels. Their findings suggested that Greek hotels make use of management accounting techniques, but there are some differences, such as the application of the full costing method. It was also found that criteria such as hotel size affect some practices and techniques.

Pavlatos and Paggios (2007) also dealt with the Greek hotel industry. Their study focused on the practices of Greek hotel companies in the field of analytical accounting, and with a research tool, a relevant questionnaire and a sample of eighty-five (85) Greek hotel companies. The results showed that Greek hotel companies operate with high fixed costs and also use a high percentage of indirect costs. Furthermore, it was concluded that the majority of hotels use traditional costing systems. Activity-based costing (A.B.C.) is used at a satisfactory rate, while the criteria that influence the choice of an A.B.C. system are cost categories and the nationality of the customers.

In another study, Lamminmaki (2008) analyzed data to understand the relationship between the hotel accounting system, hotel category and the efficiency of management decisions.

Karagiorgos, Drogalas, and Giovanis (2011) highlighted the importance of internal control and auditing in Greek hotel companies, on the occasion of various financial scandals, citing the lack of research data in the Greek hotel industry. From the results on internal control indicators, they reported that the success of Greek hotel accommodation directly depends on the proper and effective operation of internal control. They found that the level of implementation of modern management accounting systems is satisfactory, although traditional methods are more extensively applied.

Mndzebele (2013) addressed the importance of internal control and auditing as she urged firms in both manufacturing and service sectors such as hotels to implement information accounting systems to improve the quality of products or services offered using technology. Hotels, he urged, should adapt their internal control mechanisms in line with these systems, ensuring the reliability of their financial reporting. Her study revealed that there is a relationship between accounting systems and internal control system.

Zubac (2012) investigated the relationship between financial and managerial accounting in the hotel industry and concluded the need to apply accounting knowledge to the specific business practices of the hotel industry.

In addition, Briciu and Scorte (2012) also studied on the importance of management accounting and costing systems in the tourism industry, highlighting both the characteristics and implications in accounting.

The need for adequate, concise and specific information on the part of firms in the current environment has appeased the emergence of new techniques. It is observed that more companies are using quality management systems in order to meet the needs of customers and follow a differentiation strategy often chosen by them (Negakis & Tachinakis, 2013).

Hotel costing systems have failed to provide information on the profits generated by different customers or market segments (Faria, Ferreira, & Trigueiros, 2018).

Several authors argue that accounting systems in hotels provide information that, although useful for assessing profitability by segment and overall operating profitability, does not address the cost of serving specific customer groups or the profit margins associated with different market segments (Faria et al., 2018).

For costing in hotels as with other businesses, it is necessary to understand the cost structure (Mashayekhi & Ara, 2019).

According to the same study Mashayekhi and Ara (2019) there are five main cost centers for the hotel where he examined which were: 1) Cleaning service, 2) Restaurant, 3) Administrative and accounting, 4) Engineering and 5) Marketing. Operating costs are directly related to the services provided to visitors, and non-operating costs cannot be directly identified in these services (Mashayekhi & Ara, 2019).

Sevim and Korkmaz (2014) investigated the situation regarding the use of cost management techniques by Turkish hotel companies. According to the findings, only 38.1% of the hotels are familiar with modern cost

management techniques. One could argue that modern techniques are not known or welcomed by the hotel administrations there.

Activity Based Costing (ABC) is used at a satisfactory rate (9.5%).

In another study, [Sevim \(2020\)](#) stated that the sustainability of the services provided and customer satisfaction, require cost management systems that will manage a more modern perspective and will support efforts to reduce business costs. Cost management in the company is one of the most important factors for the success and continuity of its activities.

In addition, the ever-changing costs and the constant efforts to reduce costs require new regulations and perspectives for each costing system.

The Covid-19 pandemic represents an "acute shock" ([Leitner, Sheppard, Webber, & Colven, 2018](#)) worldwide. Some tourism-dependent businesses struggled even before the pandemic, indicating an inherent vulnerability ([Baum, Mooney, Robinson, & Solnet, 2020](#); [Grimsey et al., 2020](#)) while tourism and hospitality industries have been identified as particularly vulnerable to the current crisis ([Dube, Nhamo, & Chikodzi, 2021](#); [Legrand, 2020](#); [Nicola et al., 2020](#)).

Covid-19 pandemic has created a quadripartite economic strategy required ([Marron, 2020](#)): (1) accepting financial losses, (2) protecting health, (3) supporting those experiencing sudden loss of income by expanding existing safety net programs, and (4) protection of production capacity and use of economic production capacity as much as possible as soon as the virus is reduced.

Many hotels 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. 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 expenses morphing into variable expenses to aid the bottom line. 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 ([VanStekelenburg, Sankaran, Hartley, & Gonzalez, 2020](#)).

The Covid-19 pandemic caused significant business disruptions around the world, with travel and tourism being particularly impacted. In response, governments and businesses implemented drastic responses to reduce the impact of the virus and mitigate the corresponding loss in business. Through nine semi-structured interviews with senior hotel managers in Dubai, the pattern of response was understood, along with participants' perceptions of the long-term consequences of such responses.

In terms of the long-term impacts, it was felt that numerous properties would permanently close, the nature of international hospitality would become more consolidated and there would be long-term changes in operations and efficiency improvements ([Kenny & Dutt, 2022](#)).

2. Research Methodology

2.1. Subject and Procedure

The purpose of this work is the *theoretical study* and investigation of the applied costing systems by the tourism (hotel) companies, in order to draw useful conclusions about whether and to what extent they apply, what type of costing and how they share these costs in their overall operation and in order to capture whether they were affected in the after Covid-19 pandemic.

The sub-objectives of this research are the following:

1. Investigation on whether the companies perform costing in the production of products and services of hotel companies in Greece.
2. Investigate whether the companies determine the costs and their analytical results.
3. Investigate the frequency of cost determination and the analytical results.
4. Examining barriers when calculating the cost of products and services.
5. Investigation on the used cost systems, software but also methods - techniques, by the hotel companies in Greece.
6. Investigation on the degree of satisfaction and on the information provided by the applied costing system of the hotel companies.
7. Investigation on the profit centers observed by the hotel companies (auxiliary and not).
8. Examination of the percentage of participation of direct and indirect costs in the total cost of production of products and services in hotel companies.

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 research methodology concerns the methods of scientific research, which constitute an organized set of rules, which regulate the research activity with clarity and accuracy ([Dimitropoulos, 2009](#); [Karagiorgos, 2002](#); [Nova - Kaltsouni, 2006](#)).

Empirical research is characterized as large-scale, focusing on the recording of applied cost systems by tourism (hotel) companies in Greece.

Primary data was used using a questionnaire, on which the conclusions were based. Also, secondary data from the literature review was used, which formed the basis on which the theoretical approach to the topic and the corresponding research methodology were developed.

The quality of a research depends not only on the appropriateness of the research methodology and the formulation of the relevant research tools, but also on the appropriateness of the sampling strategy that has been adopted (Cohen et al., 2008). Specifically, in the present study, the method of simple random sampling (probability sampling) was chosen.

The various applied costing systems exist and operate, adapted to the requirements of each company to cover the use of administrative accounting.

The costing system is an internal consumption information system through which the costing process is implemented in a company. When designing a costing system, the cost items as well as the interrelationships that connects them should firstly be identified.

Experts agree that there is no better way to cost services or products, but it adapts to the requirements of each business, so there is no ideal proposed model. Thus, a variety of approaches are used on a case-by-case basis.

Therefore, the *research problem* that arises concerns the study of the applied costing systems by the tourist (hotel) companies in Greece.

2.2. The Questionnaire

The present work is overview research that focuses on the investigation of the applied cost systems by the tourist (hotel) companies in Greece.

The investigation of the applied cost systems can be facilitated by the use of appropriate tools. These tools help in more efficient data collection, analysis and processing in order to draw more accurate conclusions (Saunders, 1994).

Using a questionnaire is the most popular method of data collection. The questionnaire provides numerical data through the coding of answers to questions and can be delivered without the presence of the researcher and is easy to process data (Cohen et al., 2008).

In the empirical research, a questionnaire was designed with a specific structure, according to its research objectives.

The use of a questionnaire is the most widespread quantitative technique of data collection (Nova - Kaltsouni, 2006). It aims to measure variables or factors of a conceptual framework / model, and to represent the relationships between these variables.

The research questionnaire has a total of twenty-three (23) questions. All questions are closed except for the last one where any comments were requested from the participants.

The types of questions used in the questionnaire are the following:

- *Multiple options.*
- *Dichotomous.*
- *Scale (Likert type).*

The *Likert scale* is used to investigate research factors. The choice was made because they concern *scales of agreement* of the respondent with one point of view. In addition, the questionnaire follows the following rules of ethics (protection of personal data):

- *Anonymity.*
- *Confidentiality.*

3. Results

3.1. The Profile of the Sample

The present research -as it has been mentioned- presupposes the participation of hotel companies in Greece that apply or not, a costing system. The survey involved 518 hotel companies belonging to the Greek territory.

It should be clarified that the Hotel Chamber of Greece, provided us with the database with all the declared e-mails, where the final valid e-mails were 1.300 where with repeated shipments, we received 518 answers.

The main goal of the present research was fulfilled through the investigation of the applied costing systems by the tourist (hotel) companies in Greece. The results and the relevant conclusions that emerge are reported below.

The main purpose of management accounting is to provide information to management for decision making through accounting information to specific individuals or groups within the business. Internal users are all persons directly related to the day-to-day running of the business. The main internal users who use the above data are the management of the company. Costing is a special branch of management accounting that deals with both internal and external information.

External information calculates those types of costs that are necessary for the preparation of financial statements but also for the special information of the tax authorities.

In-house information collects information that can be used to make specific decisions that mainly concern the management of the company. The activities that fall within the remit of the costs cover a wide range, from the collection of data for the completion of simple financial statements to the development of specific cost functions to solve specific problems.

Costing is useful (Kotas, 1999):

- To determine the selling price of the products produced or the services offered.
- To speed up the valuation of assets when conducting inventories.
- To facilitate the various controls of many cost elements.

Costing has two main responsibilities: a) to design a cost recording system and oversee its operation and b) to provide information for administrative purposes. Hotel companies aim to produce and offer products and services.

The needs of the customers of a hotel business must be identified in determining the cost of services and food products and to travel agencies. This need becomes more acute on the days when contracts are signed with agencies.

For the correct costing, the respective hotel company must determine the following (Kotas, 1999):

- Determining the cost of a person overnight.
- Determining the cost of breakfast.
- Determining the cost of the meal.
- Determining the cost of dinner.

In addition, the cost of the items sold is determined by the system of keeping the appropriate accounts in the general accounting and the necessary portions of the warehouse of the hotel departments.

The calculation of the above costs, therefore, deems it necessary to apply methods and costing systems by hotel companies.

3.2. Important Findings

The answers now show that hotels have realized the importance of costing, as a large percentage (about 65%) said they cost their products and services. The companies that have participated so far are 75% "Classic Hotel" and 17% "Apartments", mainly 3**** stars (41%) and 2*** stars (31%), with a majority of twenty years of operation.

More than half of the participants (i.e., 52%) are on the Greek islands, while only 5.83% are from the capital Athens, explained by the fact that the Greek tourism sector and then the Greek hotel industry, have as "strong power" the islands and not the capital as in other countries Figure 1.

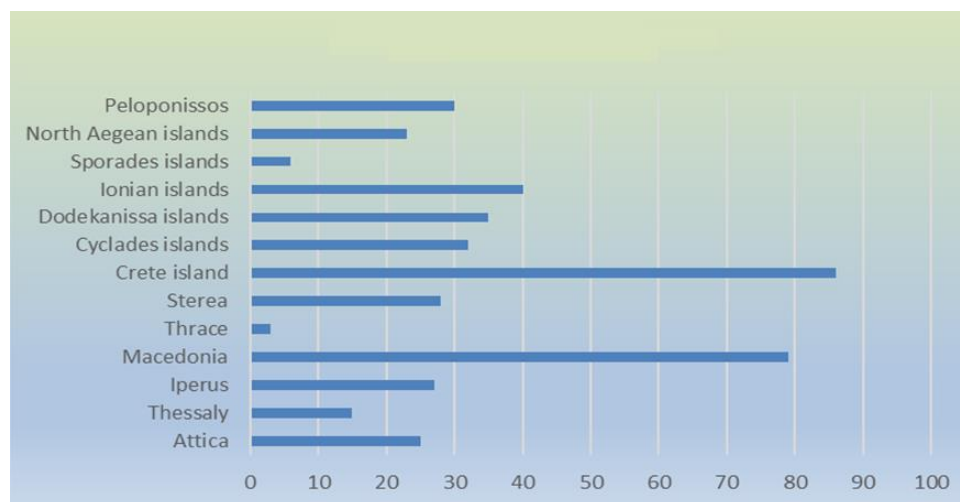


Figure 1. Grouping of responses by geographical area.

Before starting the processing and interpretation of the results, we performed a first indicative check on the quality characteristics of the sample results. Selecting the following 5 main questions of the questionnaire Table 1:

ID: Q11 - The financial effects that occurred during the period of implementation of the restrictive measures, in your opinion, how they shaped the financial position of your company:

1. Very difficult without margins for recovery.
2. Difficult but with room for recovery.
3. Less difficult than originally estimated.
4. Satisfactory.

ID: Q12 - The average turnover (turnover) in euros for the last two (2) management years 2019 and 2020 amounted to:

1. Less than 2,000,000 euros.
2. Over 2,000,000 euros and under 10,000,000 euros.
3. Over 10,000,000 euros and under 50,000,000 euros.
4. More than 50,000,000 euros.

ID: Q14 - If you did not do service costing until today, after the impact of the pandemic, would you reconsider your decision?

1. Yes
2. No

ID: Q17 – How much safe did you feel about the viability of your business during the implementation of the pandemic:

1. Very safe
2. Quite safe
3. A little safe
4. Not at all safe

ID: Q20 - The Cost Centers that you continue to operate in the current period, for how long is their operation scheduled?

1. Throughout the operation of the accommodation.
2. For the three summer months.
3. For less than three months.

Table 1. Quality characteristics of the sample results.

Statistical inference	Q11	Q12	Q14	Q17	Q20
Mean	1.855	1.137	1.544	3.002	1.533
Standard error	0.026	0.024	0.029	0.040	0.034
Median	2	1	2	3	1
Mode	2	1	2	3	1
Standard deviation	0.545	0.509	0.499	0.834	0.715
Sample variance	0.297	0.259	0.249	0.695	0.512
Range	3	3	1	3	2
Minimum	1	1	1	1	1
Maximum	4	4	2	4	3
Sum	796	488	454	1285	656
Count	429	429	294	428	428
Coef. of variation	29.36%	44.75%	32.31%	27.78%	46.68%

As we observe from the coefficient of variation and from the sizes of the standard deviation, there is a relatively large level of dispersion in the answers of the sample, which is partly due to the large categorization among the respondents (i.e., hotels from different regions of Greece and various categories). However, the relative dispersion through the differentiation coefficient, in no case exceeds 50% while its lowest values appear in the questions with ID: Identity ID Q11 and Q17, enhancing the accuracy of the majority's reply to these questions, that:

- 1) The financial position of the company after the start of the pandemic is estimated as difficult but with room for recovery.
- 2) During the implementation of the restrictive measures against the pandemic, the majority of business executives felt "a little safe" in terms of the viability of their business.

Continuing our research, we evaluated some of the effects of the pandemic on the hotel sector.

The first significant effect from the presence of Covid-19, was the reduction in the number of employees. We estimated a reduction in the average staff from 21.42 to 16.60. It is important to note here that in our sample 83.22% represented hotels in the category between 2-4 stars. In more detail the reduction is clearly seen from the following [Table 2](#).

Table 2. Number of employees.

Period	Before COVID-19	After COVID-19
Mean	21.42	16.60
Median	30.20	26.19
Mode	25.29	23.32

Regardless of the type of hotel, all three types of hotels are mainly in poor (financial) condition. However, this percentage is the highest (73%) in classic hotels. This could be explained by the fact that the classic type

hotels, cooperate with a higher percentage of foreign tourism, compared to the other two categories, which also cooperate with local tourists. Thus, restrictions on travel between countries, made the lack of tourism more important in this type of hotel [Table 3](#).

Table 3. Difficulties calculating the cost of products and services per hotel type.

Type of accommodation	Classical type hotels	Apartments rent	Traditional hotels
Bad situation without recovery signs	20.00%	25.77%	34.38%
Bad situation with recovery signs	73.00%	63.92%	65.63%
Not so bad situation	6.67%	8.25%	0.00%
Satisfactory situation	0.33%	2.06%	0.00%

We observe that regardless of the type of hotel, all three types of hotels, fall mainly in the position of poor (financial) situation. However, this percentage is the highest (73%) in classic hotels. This could be explained by the fact that the classic type hotels, co-operate with a higher percentage of foreign tourism, compared to the other two categories, which also co-operate with local tourists.

Thus, restrictions on travel between countries, made the lack of tourism more important in this type of hotel. Similarly, if we try to correlate the hotel category with the economic consequences of the pandemic, we have the following results [Table 4](#).

Table 4. Difficulties calculating the cost of products and services by hotel rating.

Accommodation categories	1*	2**	3***	4****	5*****
Bad situation without recovery signs	28.21%	20.59%	22.58%	21.21%	24.24%
Bad situation with recovery signs	64.10%	74.26%	72.26%	66.76%	60.61%
Not so bad situation	5.13%	5.15%	5.16%	10.61%	12.12%
Satisfactory situation	2.56%	0.00%	0.00%	1.52%	3.03%

Note: 1*: Star accommodation category.
 2**: Stars accommodation category.
 3***: Stars accommodation category.
 4****: Stars accommodation category.
 5*****: Stars accommodation category.

We also see that the position of the poor financial situation is obvious in this respect as well. However, it is important to note that 5-star hotels present the least bad situation as they have the lowest percentage in the category of bad situations and also the highest in the categories "not so bad" and "satisfactory". It is obvious that here, the large hotel complexes and constructions, are able to financially absorb the effects of the tourist crisis, as they probably have the financial reserves to withstand it.

The method of accounting costing is already involved at a rate of about 2 to 1 in hotel units (62.24%). However, after the pandemic, an additional 15% or so are willing to reconsider the transition to cost accounting. This could be explained as a result of the extra effort required by hotel companies to switch to more efficient and accurate financial monitoring, part of which could be cost accounting. The pandemic and the subsequent crisis in the hotel tourism industry have led to a reconsideration of this issue [Table 5](#).

Table 5. Decisions on cost accounting before and after pandemic Covid-19.

Applied costing systems	Cost accounting involved before COVID-19?	If no, would you consider to involve it after pandemic?
Yes	62.24%	77.62%
No	37.76%	22.38%

From the above, we see that the method of cost accounting is already involved at a rate of about 2 to 1 in hotel units (62.24%). Nevertheless, we observe that surprisingly so, after the pandemic, an extra percentage about 15% is willing to reconsider the transition to cost accounting. This could be explained as a result of the extra effort required by hotel companies to switch to more efficient and accurate financial monitoring, part of which could be cost accounting. The pandemic and the subsequent crisis in the hotel tourism industry have led to a reconsideration of this issue. Going further, we investigated who is considered to be the most critical factor influencing the cost-effectiveness of accounting in the hotel industry during the Covid-19 period.

Based on the results of [Table 5](#) we see that adequate financial resources show the highest trend with 37%. Obviously, the respondents confirm the importance of cost accounting in the industry and express the fact that more emphasis will be placed on the resources available in the cost accounting department of their hotel. In addition, the need to reconsider cost center allocation methods (2nd highest response with 19.83%) in the industry and of course data collection is also important.

We must not forget that the nature of the hotel business and accounting is related to the large number of cost challenges (e.g., room service costs, cost of products consumed in restaurants, swimming pools, etc.), which could be simulated in many separate businesses operating at the same time, under the umbrella of the

legal form of the hotel and all these separate businesses, they must be clearly allocated in terms of cost and of course revenue [Table 6](#).

Table 6. Factor affecting the optimal estimation of cost, during the Covid-19 period.

Factors	Rate affected
Accuracy of data collection	11.93%
Accuracy of cost centres allocation	19.83%
Accuracy of cost recording	5.75%
Financial resources sufficiency	37.93%
Lack of ERP efficiency	7.18%
Lack of technical expertise	8.33%
Lack of organization	9.05%

According to the answers in [Table 5](#) (see above), about 1/3 of our sample does not use cost accounting. However, in the remaining 2/3, we see that the most common answer is the Standard Costing method (23.50%), followed by activity-based costs (16.94%) and labor order costs (12.02%). Clearly these results are explained by the fact that due to the nature of the hotel industry (i.e., mainly service costing and rarely product costing), we see that these methods are better for such a business model.

Given that our research was conducted during the Covid-19 pandemic period, when tourism forecasts were and still are difficult to make, we understand why these three mentioned costing methods are considered the most appropriate [Table 7](#).

Table 7. Costing method used.

Method	Rate of method used
Standard costing	23.50%
Marginal or direct costing	4.10%
Full or absorption costing	4.10%
Process costing	3.28%
Activity based costing - A.B.C.	16.94%
Job order costing	12.02%
No costing process	36.07%

The data most affected by the implementation of the measures in the Covid-19 pandemic are the financial resources (69.75%) and the majority of the collateral corresponded to the total revenue (93.21%).

Hotel companies throughout Greece were asked to define the range of the percentage of participation of specific elements of direct and indirect costs in the total cost of production of products and services.

In the last stage of our research, we tried through statistical regression to check whether the category of a hotel (5 stars, 4 stars, etc.) correlates with whether it carries out costing and how safe the hotel management felt in terms of business viability during the duration of the implementation of restrictive measures against the spread of the pandemic [Table 8](#).

Table 8. Statistical regression to check whether the category of a hotel and correlation with a sense of sustainability during the COVID-19 pandemic.

Regression statistics	Correlation of accommodation category using costing	Correlation of accommodation category with a sense of sustainability during the COVID-19 pandemic
Multiple R	0.221	0.118
R square	0.049	0.014
Adjusted R square	0.047	0.012
Standard error	1.019	1.038
Observations	518	518

The results according to the [Table 8](#) and especially the measurement of the correlation coefficient "R squared" showed that:

A very low correlation rate can be established since only 4.9% of the difference in whether a hotel costs or not is related to its category, while an even smaller percentage (1.38%) regarding how safe its management felt hotel is related to the accommodation category as well.

Thus, we conclude that obviously the consequences of the pandemic and the related lock-down measures, affect the entire hotel sector regardless of category and obviously the high capital adequacy of high-class hotel complexes cannot compensate for the corresponding high job losses, resulting from these restrictive measures and booking cancellations.

4. Discussion and Conclusions

The present research tries to present the concept of costing methods and their effect on the financial statements of the tourism industry.

In our sample we collected responses from a number of 518 business executives employed in the hotel industry in Greece. To make a first assessment of the reliability of the result, we analyze the qualitative characteristics of the sample. Regarding the placement, 65% of the sample consists of cost control supervisors, while 21% of the sample concerns General Managers / Managers and the remaining 14% from other specialties (CFO: Chief Financial Officer, Internal Auditors, etc.). In terms of education, 61% of our respondents are a significant lever of education. The analysis of the sample, in geographical segment terms, shows that more than half of the participants (i.e., 52%) are in the Greek islands, while only 5, 83% come from the capital Athens, of course explained by the fact that Greek tourism sector and then the Greek hotel industry, is "strong paper" islands and not the capital as in other countries. Finally, the operating segment analysis of the sample, shows that 75% are classic hotels, 17% of rental apartments and a small percentage of 8% of traditional hotels (mainly in winter vacation locations).

About 1/3 of our sample does not use cost accounting. However, in the remaining 2/3, we see that the most common answer is the Standard Costing method (23.50%), followed by activity-based costs (16.94%) and labor order costs (12.02%).

The paper contained both a theoretical and an empirical overview of its subject. In the empirical part, the concept of accounting science is mentioned, as well as the methods and systems of cost accounting and costing. In addition, basic concepts of the tourism industry are defined. There is a lot of work in the literature that mentions the importance of costing by hotel companies for decision making and control, but not to which extent the hotel companies implement cost systems and what problems they face. In addition, this paper presents the tools that hotels use to cost products and services and what systems and methods of costing - techniques they use.

It also presents the percentage of participation of direct and indirect cost elements (raw materials, direct labor and indirect labor) in the total cost of production of products and services of hotel companies. The research findings from the answers to the problems were faced by hotels when calculating the cost of products and services can be used to broaden the reasons for these problems and their possible solutions.

The answers to which costing tool hotel businesses use can be used to further document whether this tool is adequate and what improvements can be made for a better and more effective implementation.

The results collected about the degree of satisfaction of the information, provided resulting from the implementation of a costing system by hotels, could be further extended by the question to be answered, what useful information do not have at their disposal, hotel companies, for calculations of the system they use. Finally, the research findings can be used to improve or redistribute the percentage of participation of specific elements of direct and indirect costs in the total cost of production of products and services, for better and rational management of the costs of hotel businesses.

The data mostly affected by the implementation of the measures in the Covid-19 pandemic are the financial resources (almost 70%) and the majority of the collateral corresponded to the total revenue (almost 94%).

The financial position of the company after the start of the pandemic was estimated as difficult but with room for recovery.

The effects of the pandemic and lock-down measures affected the independent hotel sector with high turnover losses due to restrictive measures and booking cancellations, with companies feeling "a little unsafe" in terms of business viability in the near future.

The first significant effect from the presence of Covid-19, was the reduction in the number of employees. There is optimism that this bad situation can be improved in the future with appropriate measures. While there is still a perception that financial resources are partially validated as a pillar of security, the need for more cost-effective accounting is also recognized. The Covid-19 pandemic has highlighted the importance of costing systems in hotel businesses as their use has increased.

5. Limitation and Further Research

The current situation of the Greek Hotel Industry regarding the cost systems they apply shows encouraging messages. The research findings and the answers given, show that almost 40% of the participants estimate their costs internally. A further study that would be useful is whether this cost accounting is adequate. The present research presupposes the participation of hotel companies in Greece that apply or not a cost system, main limitations of the research are the size of the sample (over 500 answers) of the hotel companies that answered the questionnaire, the time limit for completing the research and the geographical restriction in Greece. In addition, it should be noted that one limitation of the investigation was the reluctance and several times the reluctance of many hotel companies to respond to the investigation due to the confidentiality and protection of personal data. It would be good to recognize why these time periods occur or if some other time period had better results. In addition, a "thorn" in the costing of hotels and services is the correctness of the information that by implementing a costing system acquires meaning and usefulness.

Another further study which would also be useful, could be the focus on the recovery processes from the impact of the Covid-19 period and how hotel businesses will redefine the benefits of cost enforcement systems.

In addition to this, focusing on the management of financial results and customers but also on the overall impact on the use of costing systems after the Covid-19 pandemic, could give a more specialized view.

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