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## **Management accounting practices in the Portuguese lodging industry**

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**Purpose:** This paper aims to characterize management accounting techniques at the Portuguese lodging industry, identifying the techniques adopted and the determinants of adopting them and their adequacy for the decision-making process. It is also a purpose to understand the extent to which the industry adopts the Uniform System of Accounts for the Lodging Industry.

**Design/methodology/approach:** The sample includes 35 hotels, which were analyzed in the years 2009 and 2010.

**Findings:** Evidence is found supporting the fact management accounting is a tool incorporated in the daily management practices of hotels and useful to support the decision making process. The proportion used of traditional management accounting techniques is higher than the proportion of use of contemporary ones. The adoption of these techniques is influenced by the fact of the hotels being subsidiaries of a multinational hotel chain, as well as by their annual turnover. In Portugal, there is a weak use of USALI. It is more used in the large hotels and in hotels with a foreign control.

**Originality/Value:** Management accounting supports hotels to improve their performance, thus becoming relevant to analyze management accounting practices used by them, particularly which instruments and techniques. In this context, this study, the first of its kind in Portugal, is justified with the increasing need for accurate and actual information of the accounting practices of the hotels operating in Portugal.

**Keywords:** Management accounting, Lodging industry, Uniform System of Accounts for the Lodging Industry, USALI, Europe, Portugal

**Paper type:** Research paper

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**Thematic area: Management accounting**

Key-Words: management accounting, lodging industry, *uniform system of accounts for the lodging industry*, USALI.

## **Abstract**

Nowadays it is becoming more notorious the increase in competition within the hotel and lodging industry, thus making more relevant the decision making process for managers, in what concerns the effective use of accounting tools to provide the necessary framework of information for their decisions.

This study as the purpose of characterizing management accounting techniques in Portugal, identifying the traditional and contemporary techniques, the use of *USALI*, if the decision makers are satisfied with the information available, and determine which factors influence the industry to adopt a certain technique.

## **1. Introduction**

In 2008 the hotel and lodging industry in Portugal represented 4% of the nation's GDP (INE, 2008). It is notorious the increase in the number and quality of these equipments nationwide, and the increase in competition within the business.

Thus the management of these businesses is increasingly concerned with the effectiveness of their decision making process, and management accounting as a management function must provide the decision makers the information required to support this process.

This study begun with the object being the hotels in the western region of Portugal (Santos *et al.*, 2010), and thought the results were satisfactory was decided to extend the object to business units at a national level.

## **2. Objectives**

This study as the objective of characterizing management accounting techniques at the Portuguese lodging industry, particularly in hotels, identifying the techniques adopted and the purpose of adopting certain techniques, the deepness of their use, the degree of satisfaction of management with these techniques and their adequacy for the decision-making process, and their expectations in improving them in the future.

It is also objective of this work to understand the extent to which the industry adopts and uses the *Uniform System of Accounts for the Lodging Industry* (USALI). This framework allows a hotel to structure its accounting information in an adequate way no analyze and make management decisions, assuring a better comparison of information and benchmarking within the sector at international level. Its adoption is generalizes in the world, with emphasis to the United States of America (Pavlatos and Paggios, 2009).

## **3. Justification**

Tourism is becoming of increasing importance for the world economies, for which success it is more and more relevant the contribution of all agents, among which the hotel and lodging industry players.

In this context, this study is justified with the increasing need for accurate and actual information of the hotels operating in Portugal.

Management accounting by its turn, supports hotels to improve their performance, thus becoming relevant analyze management accounting practices us by them, particularly which instruments and techniques and with which evolution.

The previous study (Santos *et al.*, 2010) was confined to the western region of Portugal, and among the results was found a vast usage of accounting techniques within the industry, thus motivating a broader study at a national level.

## **4. Object of the study**

The present research project as selected as object of the study hotels in Portugal. The sample includes 35 hotels, which were analyzed in the years 2009 and 2010, equally distributed in the sub categories of hotels, apartment-hotels and hostels.

## 5. Methodology

This research Project deals particularly with questions of the type Who? What? Where? How many? According to Yin (2003), all these types of questions can be answered by the method of questionnaire.

Since one of the main disadvantages of the questionnaire method is the low rate of respondents, it was decided to make it through personal interviews, made by groups of students of the Tourism and Hotel management degree at IPL/ESTM, supervised by the teachers of the scientific fields of financial accounting and management accounting. The questionnaire structure was adopted from Gomes (2007), and is reproduced as Appendices.

The data was processed using SPSS (Statistics Packages for Social Sciences). Utterly will be realized a univariate and bivariate analysis in order to demonstrate the proposed objectives of the research project.

At the univariate analysis, variables will be analyzed individually, and the results will be displayed through graphics and tables of absolute frequencies and relative frequencies.

Concerning bivariate analysis, we will study the independence or association among variables.

## 6. Revision of literature

Management accounting techniques have evolved in order to respond to the increase challenges imposed by the management and the competitive economy. Nevertheless the traditional techniques have been the ones with more vast use and adoption, being the contemporary techniques adopted at a slower rate (Adler *et al.*, 2000).

Thus it is verified the difference between theory and practice of management accounting, being the contemporary techniques very developed in theoretical terms but contrasting their relatively reduced adoption within companies (Jones, 2008).

Some authors suggest that management accounting techniques are different among companies from different industries (Torrecilla *et al.*, 1996; Downie, 1997; Shields, 1998; Williams and Seaman, 2001; Drury and Tayles, 2005), presenting arguments that cause this diversity:

- Product live-cycle;
- Structure of costs, technology and production;
- Intensity of competition;
- Uncertainty and price flexibility;
- Competitive strategies and organizational designs.

In the literature there may be found several studies that refer the determinants that make one company opt for some management accounting techniques. The fact of company being in a highly competitive market (Tayles and Walley, 1997), and also organizational variables such as communication, coordination, decentralization and formalization (Elmore, 1990; Luft and Shields, 2003) influence management accounting techniques adopted by companies worldwide.

The size of a company (measured through sales volume or number of employees) is also a factor that influences the management accounting techniques in a company (Clarke *et al.*, 1999; Adler *et al.*, 2000).

Another aspect to have in account is that subsidiary from multinational companies tend to adopt contemporary management accounting techniques at a faster pace. This means that relations among companies influence the adoption of certain management accounting techniques, particularly in the case of existence of a parent foreign company (Clarke *et al.*, 1999; Malmi, 1999; Clarke and Mullins, 2001; O' Connor *et al.*, 2004).

One may question if the management accounting techniques adopted by hotels are different from the ones adopted by other companies, and which are the determinants that influence hotels to adopt certain techniques.

According to Pavlatos and Paggios (2009), there is a growing desire to understand the practice of management accounting in hotels, having these techniques an important role in their decision making process (Oliveira *et al.*, 2008).

As a consequence of several specificities of the hotels, the information required by managers to make decisions is different from other industries (Mia and Patiar, 2001). Hotels need a special attention, because they have a diverse scope of activities, being both service providers and goods providers (Silva, 2007).

It is important the use of management accounting information to allow the optimization of the decision making processes by hotel managers, due to the fact of them facing a big competition (Downie, 1997). Hotels have two sources of information: market research and accounting information. The ideal is that this information could be aligned and coordinated thus supporting the managers (Downie, 1997).

This economic activity is characterized by having a great volatility in demand and fixed costs structure, perishable goods, high competition and a great diversity of services due to the heterogeneity of clients (Downie, 1997; Mia and Patiar, 2001).

Concerning the competitive environment, hotel units face direct and indirect competition (Mia and Patiar, 2001). Oliveira *et al.* (2008) mentions that competition, plays an important role in influencing the introduction of new accounting techniques in the industry.

The management accounting techniques, according Ferreira (2002) may be divided into traditional and contemporary. This author opted to consider the traditional techniques the following:

- Sales break even;
- Strategic Planning;
- Budgeting;
- Budget deviation analysis;
- Product costing;
- Product profitability;
- Tableau de bord;
- Return on investment.

Concerning the contemporary techniques he considered the following:

- Balanced Scorecard;
- Activity based budget;
- Activity based costing;
- Target costing;
- Customer profitability analysis;
- Economic Value Added;

- Product life cycle costing;
- Benchmarking;
- Backflush costing;
- Theory of constraints;
- Kaizen costing.

Phillips (1996) concludes that Strategic Planning is widely mentioned in the field of hotel management, as well as Performance evaluation. He remarks that the Strategic Planning existent in hotels is quite incomplete since it is commonly an expansion of the financial budget with less emphasis on strategic issues.

Jones (2008) confirms this idea concluding that the Budgeting is the commonly wide technique used by hotels. Cruz (2007) concludes that budgets are a valid tool to the budgeting control process within a hotel, thus remarks that budgets used in hotels have some specific aspects when compared to the budgets elaborated to other industries.

Hotel chains are nowadays in a strong competitive environment, thus according to Cruz (2007), planning is an essential tool for their management and budgets a part of the process. They should not be rigid but flexible. Due to the internationalization of hotel chains operations, a common accounting technique is Benchmarking, allowing the comparison among different business units (hotels).

Cruz (2007) suggest other techniques to have a good influence in the management of hotels such as Balances Scorecard, Activity based budget, Activity based costing, and Customer profitability analysis.

Downie (1997) refers that should be more developed the Break even analysis and the Customer profitability analysis per market segment. He remarks that there is an inter-relation among some management accounting techniques, defending that in order to implement the Customer profitability analysis per market segment, it is more relevant the use of Activity based costing than the traditional cost centre approach, meaning that there should be a change in the cost affecting process. This corroborates the idea of integrating marketing strategy with accounting information.

Cost management and control is a commonly used technique adopted by hotel managers analyzed by Oliveira *et al.* (2008), with the purpose of supporting the decision making process.

Lee and Kim (2009) analyzed if the Economic Value Added technique influenced the market profitability for the hotel industry, but found out that this technique was not a good way to measure this.

Pavlatos and Paggios (2008) made a research in Greece, concerning the accounting techniques adopted by hotel units. They concluded that traditional techniques are widely used when compared to the cotemporary techniques less widespread. The most widely used techniques were Budgeting, Budget deviation analysis, Product costing techniques and Product profitability analysis. The techniques with a moderate usage were Return on investment, Break even and Strategic Planning.

Concerning the contemporary accounting techniques, the most widely used is Customer profitability analysis, and with moderate usage the Economic Value Added. Less used were the techniques Activity based costing, Target costing, Balanced Scorecard, Benchmarking, Activity based budget and Product life cycle costing. Techniques such as Backflush costing, Kaizen costing and Theory of constraints, were nor approached in this study.

In Portugal, Gomes (2007) analyzed the accounting techniques used by industries in different sectors, where the lodging industry was also represented. The mostly used traditional accounting techniques were Budgeting, Budgeting deviation analysis, Tableau de Bord and return on investment. The contemporary techniques are less used, though having some relevance the Balanced Scorecard, Activity based budgeting, Activity based costing, Target costing and Benchmarking.

Pavlatos and Paggios (2007) made a research about the usage of USALI in Greek hotels. They concluded that 53,3% of hotels belonging to multinational hotel chains used USALI, compared to only 2,9% of national hotels.

This system is also used by some of Portuguese hotels. This fact can be verified in a study developed by AHP (Portugal Hotels Association), mentioned by Faria (2007) (Table 1).

Table 1 – Utilization of USALI in Portugal

Region	Classification		
	***	****	*****
Azores	5%	11%	0
Madeira	0	18%	33%
Porto	25%	37%	14%
North of Porto	11%	6%	0
Lisbon area	6%	8%	0
Midlands (interior)	5%	23%	0
Western region	14%	0	100%
Lisbon – city	31%	47%	46%
Estoril and Sintra	0	36%	0
Algarve	4%	32%	33%
Alentejo	0	0	100%

Source: Adapted from Faria (2007)

Lima Santos *et al*, (2010) analyzed the accounting techniques used by hotels in the western region of Portugal, and concluded that management accounting is widely used by management, being the traditional techniques more widespread. Concerning the use of USALI, there are evidences of a progressive knowledge and use of this Framework to support and simplification of information processing.

Management accounting is gaining more importance through all business sectors, and the trend is also visible within the lodging industry and hotels. Management accounting techniques are more important to support the decision making process, though the traditional techniques being more adopted when compared to the contemporary ones. USALI as a framework is also gaining support particularly among multinational hotel chains.

## 7. Results

In this study were analyzed 35 hotels from different categories and regions from Portugal. From these, 11 belong to national chains, 2 are subsidiaries of multinational hotel chains. The annual turnover ranges from 16.000€ to 60.000.000€.

We used the framework of Porter (1985) to analyze the industry forces and added an extra force derived from the influence of the State, in order to understand the relative influence of each force in affecting the industry. We conclude that the competition within the industry is the strongest force, with an average value of 5,33, followed by the power of customers. In

these two competitive forces the mode is 6 and 7 respectively, meaning that the majority of inquiries considered the power of these forces as being “high” and “very high” (Table 2).

Table 2 – Relative power of the forces affecting the industry

Power of the forces within the industry Scale: 1 low or negligible to 7 very high	N	<4	4	>4	Average	Mode
Competition within industry	30	10%	16,7%	73,3%	5,33	6
Threat of new entrants	33	33,3%	30,3%	36,4%	4,09	4
Threat of substitute products	32	62,5%	6,3%	31,2%	3,28	2
Suppliers	34	14,7%	29,4%	55,9%	4,00	4
Customers	34	32,4%	17,6%	50%	5,29	7
State	32	34,4%	18,8%	46,8%	4,31	5

Concerning the intensity of competitors within the industry, this is more evident in terms of the price, being the mode 6 “high” and the choice of most of the inquiries (Table 3).

Table 3- Intensity of competitors

Intensity of competitors Scale: 1 low or negligible... 7 very high	N	<4	4	>4	Average	Mode
Price competition	35	8,6%	11,4	80%	5,43	6
Labor force competition	35	64,7%	23,5%	11,8%	3,09	3
Buying of goods competition	35	70,6%	23,5%	5,9%	2,41	1
Promotion competition	35	22,9%	22,9%	54,2%	4,46	6

Concerning their competitive strategies (Porter, 1985), the main strategy followed by the inquiries is the differentiation of their offer, though some hotels use both cost leadership and differentiation as their strategies (Table 4).

Table 4 – Competitive strategies of hotels

	Nº of hotels	%
Cost leadership	10	28,6
Differentiation of products and services	18	51,4
Both strategies	7	20,0
Total	35	100,0

Of the 35 inquiries, 85,7% (30) have implemented and use management accounting processes. The 5 units that do not use this practice are very small hotels that are not subsidiaries of either national or multinational hotel chains.

Concerning the use of USALI, it is used with different depths by 15 of the inquiries.

The hotels use management accounting mainly with the purpose of supporting their decision making process and to the budgeting process (Table 5).

Table 5 – Purpose of using management accounting

Purpose (by order of importance)	Percentage
Decision making	65,7%
Budgeting	60%
Support management information systems	57,1
Elaboration of Income and loss statement	54,5%
Calculate gross margin per product/service	50%
Estimate cost of products/services	50%
Comply with law obligations	31,4%
Pricing of products/services	31,4%
Others	20%
Evaluation of human resources	17,1%

Having present that the information supplied by management accounting is adequate to several management functions (Table 6), we conclude that the functions to which this information is more adequate are support the decision making process and knowledge of costs structure, with a score of 5,43 and 5 respectively.

Table 6 – Adequacy of management accounting to management functions

Management functions Scale: 1 Inadequate... 7 Adequate	Obs.	<4	4	>4	Average
Estimate cost of products/services	30	20%	10%	70%	5
Pricing of products/services	30	23,3%	22,9%	53,8%	4,43
Decision making	30	10%	10%	80%	5,43
Evaluation of human resources	30	73,3%	3,3%	23,4%	2,9
Profitability of products and services	30	23,3%	16,7%	60%	4,57
Profitability of customers	30	33,3%	16,7%	50%	3,8
Profitability of markets	30	26,7%	26,7%	46,6%	3,97

As previously discussed, management accounting has a vast scope of techniques, some of which are considered to be traditional accounting techniques. From these, the ones that are most used by inquiries are Budgeting, Budget deviation analysis and Strategic Planning (Table 7), with 76,7%, 66,7% and 66,6% respectively.

Table 7 – Traditional accounting techniques used by inquiries

Techniques Scale: 1 no use... 7 extensive use	Obs.	<4	4	>4	Average	Mode
Break even	30	33,3	6,7	60	4,33	5
Strategic planning	30	26,7	6,7	66,6	4,7	5
Budgeting	30	10	13,3	76,7	5,5	7
Budget deviation analysis	30	20	13,3	66,7	5,03	7
Product costing techniques	30	43,3	13,3	43,4	3,9	5
Product profitability techniques	30	33,3	16,7	50	4,17	6
Tableau de bord	30	40	6,7	53,3	4,33	7
Return on investment	30	46,7	6,7	46,6	3,67	1

Concerning the contemporary accounting techniques, the results are opposed to the previous ones, having almost all of the techniques a score with a score of average use below the null value, except for the Activity based budgeting with an average of 4,23 (Table 8), followed by Activity based costing, Customer profitability analysis and Benchmarking.

Table 8 – Contemporary accounting techniques used by inquiries

Techniques Scale: 1 no use... 7 extensive use	Obs.	<4	4	>4	Average	Mode
Balanced Scorecard	30	76,7	3,3	20	2,27	1
Activity based budget	30	33,3	6,7	60	4,23	1
Activity based costing	30	50	3,3	46,7	3,47	1
Target costing	30	76,7	10	13,3	2,23	1
Customer profitability analysis	30	53,3	20	26,7	3,10	1
Economic Value Added	30	80	10	10	2,03	1
Product life cycle costing	30	73,3	10	16,7	2,53	1
Benchmarking	30	60	0	40	3,23	1
Backflush costing	30	86,7	10	3,3	1,57	1
Theory of constraints	30	80	13,3	6,7	1,83	1
Kaizen costing	30	90	10	10	1,5	1

As a consequence of the fact that Backflush costing, Theory of constraints and Kaizen costing are techniques with practically no use among inquiries, they were not subject to the analysis that will follow.

We will continue the presentation of conclusions relating the analysis of factors that influence the competitiveness of hotels and (Table 2 and 3), and their influence in the choice of traditional accounting techniques by the inquiries.

As we are in the presence of ordinal variables, we have chosen *Spearman's Rho* in order to make a correlation analysis. According to Pestana and Gageiro (2003), *Spearman's Rho* measures the intensity of the relation among variables. Fink (1995) states that *Spearman's Rho*, is commonly used to describe the relation among two ordinal variables or one ordinal and other numeric variable.

Due to the fact that this coefficient is not sensitive to asymmetric distributions, it does not require normal populations. This coefficient gives a score between -1 and 1, and the closer to these extremes, the biggest correlation among variables.

When analyzing *Spearman's Rho* of the traditional accounting techniques with other variables that characterize the competitiveness within the industry, we found some moderate associations thus the correlation coefficient is between 0,39 and 0,58.

Having present that the correlation is positive, we can conclude that generically, the hotels that use the traditional accounting techniques are the ones who recognize to face a bigger competition (Table 9).

Table 9 – Association between variables that characterize competition and the utilization of traditional accounting techniques.

<i>Spearman's Rho</i>		4.1.4	4.2.1	4.2.4	4.3.2	4.1.5	4.2.2	4.2.3	4.1.2	4.1.1
Sales break even	Correlation coefficient Sig. (2-tailed)	0,449 0,008								
Strategic planning	Correlation coefficient Sig. (2-tailed)	0,437 0,01	0,452 0,006	0,57 0,000	0,423 0,013					
Budgeting	Correlation coefficient Sig. (2-tailed)	0,448 0,008		0,523 0,001		0,354 0,04	0,536 0,001	0,458 0,007		
Budget deviation analysis	Correlation coefficient Sig. (2-tailed)			0,526 0,005						
Product costing techniques	Correlation coefficient Sig. (2-tailed)						0,397 0,04		0,435 0,023	
Tableau de bord	Correlation coefficient Sig. (2-tailed)						0,416 0,031			0,428 0,026

4.1.4 – Suppliers; 4.2.1 – Price competition ; 4.2.4 – Promotion competition; 4.3.2 – Suppliers; 4.1.5 – Customers; 4.2.2 – Labor force competition; 4.2.3 – Buying of goods competition; 4.1.2 – Threat of new entrants; 4.1.1 – Competition within industry.

Another aspect that was analyzed in the revision of literature was that the subsidiaries of multinational hotel chains tend to adopt the contemporary accounting techniques, when compared to other hotels. Having that present, we analyze the sample to verify whether we could corroborate the same conclusion.

We have chosen the *Kruskal-Wallis* test, which is used to test the equality hypothesis (Pestana and Gageiro, 2003). We have defined the following hypothesis: H0: The distribution of the variable among all types of hotels (not subsidiary, subsidiaries of a national chain,

subsidiaries of a multinational chain) is equal in central tendency, and Ha: The hotels are not equal in central tendency. The hypotheses were applied to the whole sample.

According to the *Kruskal-Wallis* test, the null hypothesis is not rejected (Appendices), except for the techniques Return of Investment, Activity based budget, Activity based costing and Product life cycle costing, where the null hypothesis is rejected to a significance level of 0,05. In the three groups considered, these techniques have a different central tendency.

It is patent at Table 10 that these techniques are of more common use in the subsidiaries of multinational hotel chains. This confirms that the hotels subsidiaries of multinational chains are more developed in terms of the use of management accounting techniques.

Table 10 – Average utilization of accounting techniques according to the variable subsidiary.

Management accounting techniques	Subsidiary of national chain	Subsidiary of multinational chain	Not subsidiary
Break even	4,00	5,00	3,95
Strategic planning	4,36	6,50	3,86
Budgeting	5,55	6,50	4,36
Budget deviation analysis	5,55	6,50	4,00
Product costing	3,82	5,00	3,36
Product profitability	4,18	6,00	3,27
Tableau de bord	3,91	7,00	3,55
Return on investment	3,64	7,00	2,77
Balanced scorecard	2,45	1,00	2,00
Activity based budget	4,36	7,00	3,18
Activity based costing	3,45	7,00	2,59
Target costing	2,00	1,00	2,18
Customer profitability analysis	3,18	1,00	2,77
Economic Value Added	2,09	1,00	1,86
Product life cycle costing	2,55	7,00	1,77
Benchmarking	2,91	7,00	2,55

The annual sales turnover could also be a variable that influences the use of accounting techniques. We decided to analyze the intensity of the relation between the adoption of management accounting techniques and annual sales turnover, and have chosen *Spearman's Rho*. The coefficients that have been found are all positive, and we can confirm that the hotels with higher annual sales turnover adopt a large number of accounting techniques. Note that some accounting techniques have significant coefficients, bigger than 0,5 (Break even, Strategic Planning, Budgeting, Budget deviation analysis, Activity based budget, Activity based costing and Product life cycle costing).

## 8. Conclusion

Management accounting techniques are continuously developing in order to respond the challenges that organizations face. According to Pavlatos and Paggios (2009), the interest in management accounting within the lodging industry is increasing, and it is consider very important in the decision making process (Oliveira et al., 2008).

This research allows us to conclude that, nowadays, accounting is a management tool incorporated in the daily management practices of hotels, and useful to support the decision making process in several aspects.

Most of the hotels that have answered our inquiry use accounting techniques, with the main purpose of providing information to support management control.

The traditional accounting techniques are used frequently, what corroborates previous studies from Pavlatos and Paggios (2008), where the same evidences were found in Greek hotels.

In the hotels that were subject to this study, there is a mismatch between theory and practice of management accounting, because some of the contemporary techniques are not known and thus not adopted by the hotels. This fact confirms the conclusions of Jones (2008). Nevertheless, the contemporary accounting techniques frequently more adopted by the hotels are the ones more present in the literature (Activity based costing and Activity based budget).

The conclusions that we made are to some extent close to the conclusions of other researchers in this field. Phillips (1996) refers that Strategic planning is a frequent technique adopted within the industry. Jones (2008) refers that the Budgeting is the mostly used technique. Cost control e a technique widely used by hotel managers Oliveira et al. (2008), with the purpose of supporting the decision making process. Pavlatos and Paggios (2008) have found that the traditional accounting techniques more frequently adopted were Budgeting, Budget deviation analysis, Product costing and Product profitability analysis.

By using Spearman´s Rho we verified that there is a moderate association between variables that characterize the competition within the sector and the degree of adoption accounting techniques. Having that present, we confirm that competitiveness within the industry as a positive influence the management accounting practices adopted by hotels, an idea previously transmitted by Tayles and Walley (1997).

We also have found that the adoption of accounting techniques by the hotels, is influenced by the fact of them being subsidiaries of a multinational hotel chain, as well as by their annual turnover.

In conclusion, we found three factors that influence management accounting practices at hotels, and believe that there is an opportunity of analyzing in more details this findings in future research projects.

## Appendices

**Hypothesis Test Summary**

	<b>Null Hypothesis</b>	<b>Test</b>	<b>Sig.</b>	<b>Decision</b>
1	The distribution of BEP is the same across categories of subsidiária.	Independent-Samples Kruskal-Wallis Test	.950	Retain the null hypothesis.
2	The distribution of Planestr is the same across categories of subsidiária.	Independent-Samples Kruskal-Wallis Test	.137	Retain the null hypothesis.
3	The distribution of Orçament is the same across categories of subsidiária.	Independent-Samples Kruskal-Wallis Test	.349	Retain the null hypothesis.
4	The distribution of Desvios is the same across categories of subsidiária.	Independent-Samples Kruskal-Wallis Test	.080	Retain the null hypothesis.
5	The distribution of teccusteio is the same across categories of subsidiária.	Independent-Samples Kruskal-Wallis Test	.499	Retain the null hypothesis.
6	The distribution of ARP is the same across categories of subsidiária.	Independent-Samples Kruskal-Wallis Test	.108	Retain the null hypothesis.
7	The distribution of Painelind is the same across categories of subsidiária.	Independent-Samples Kruskal-Wallis Test	.114	Retain the null hypothesis.
8	The distribution of rendactivo is the same across categories of subsidiária.	Independent-Samples Kruskal-Wallis Test	.037	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

### Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of BSC is the same across categories of subsidiária.	Independent-Samples Kruskal-Wallis Test	.580	Retain the null hypothesis.
2	The distribution of OBA is the same across categories of subsidiária.	Independent-Samples Kruskal-Wallis Test	.042	Reject the null hypothesis.
3	The distribution of CBA is the same across categories of subsidiária.	Independent-Samples Kruskal-Wallis Test	.020	Reject the null hypothesis.
4	The distribution of calvo is the same across categories of subsidiária.	Independent-Samples Kruskal-Wallis Test	.482	Retain the null hypothesis.
5	The distribution of arc is the same across categories of subsidiária.	Independent-Samples Kruskal-Wallis Test	.257	Retain the null hypothesis.
6	The distribution of EVA is the same across categories of subsidiária.	Independent-Samples Kruskal-Wallis Test	.496	Retain the null hypothesis.
7	The distribution of ccvp is the same across categories of subsidiária.	Independent-Samples Kruskal-Wallis Test	.023	Reject the null hypothesis.
8	The distribution of bench is the same across categories of subsidiária.	Independent-Samples Kruskal-Wallis Test	.051	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

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