

Management accounting practices in the Portuguese lodging industry

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Abstract

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

Introduction

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

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, their adequacy for the decision-making process, their expectations in improving them in the future and finding the determinants of management accounting in hotels.

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 to 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 (USA) (Pavlatos and Paggios, 2009).

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.

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).

Management accounting is a highly complex activity in a strategic context. The management accounting techniques related with strategy are underdeveloped in organizations (Tillmann and Goddard, 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.

The accounting information depends of the context of the decision. So, we can ask 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.

In the literature there may be found several studies that refer the determinants that make one company adopt for some management accounting techniques, supported by the theory of contingency. The fact of company being in a highly competitive market (Tayles and Walley, 1997), organizational variables such as communication, coordination, decentralization and formalization (Elmore, 1990; Luft and Shields, 2003) and business strategy and market orientation (Cadez and Guilding, 2008) influence management accounting techniques adopted by companies worldwide.

The firm size (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; Cadez and Guilding, 2008). Cadez and Guilding (2008) refer that a large company implies an increase of complexity and sophistication in management accounting techniques. Such as, there are a positive association between the size of a company and the use of strategic management accounting.

Another aspect to have in account is that subsidiary from multinational companies tend to adopt faster the contemporary management accounting techniques. 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).

Schmidgall et al. (1996) analyzed if culture influence the use of management accounting techniques but they didn't arrive an affirmative answer for the Budgets, but they verified this for Strategic planning. A majority of hotel chains in both the USA and Scandinavia use budgets and budget variance analyze. The budgets are elaborated by a bottom up approach. However, USA hotels prepared budgets for five or more years but Scandinavia not. The USA hotels have a tighter control over food costs and beverages costs, while Scandinavia has got a tighter control over other costs.

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).

The organizations make decisions based on information provided. The mutability in the surroundings is a feature always present, so the need for information is constant (Simão and Alves, 2010). Management accounting can satisfy this need.

Downie (1997) refers several decisions related with accounting information. For example, the compilation of marketing plan needs a budget compilation.

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).

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 (Table 1).

Table 1 – Traditional versus contemporary accounting techniques

Traditional techniques	Contemporary techniques
<ul style="list-style-type: none"> • Budgeting; • Budget deviation analysis; • Product costing; • Product profitability; • Return on investment; • Sales break-even; • Strategic Planning; • Tableau de bord. 	<ul style="list-style-type: none"> • Activity-based budget; • Activity-based costing; • Backflush costing; • Balanced Scorecard; • Benchmarking; • Customer profitability analysis; • Economic Value Added; • Kaizen costing; • Product life cycle costing; • Target costing; • Theory of constraints.

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) suggests other techniques to have a good influence in the management of hotels such as *Balanced Scorecard*, *Activity-based budgeting*, *Activity-based costing*, and *Customer profitability analysis*.

Downie (1997) refers that should be more developed the *Sales break-even* 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* by 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 contemporary 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*, *Sales break-even* and *Strategic Planning*.

Concerning the contemporary management 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 budgeting* and *Product life cycle costing*. Techniques, such as *Backflush costing*, *Kaizen costing* and *Theory of constraints*, were not approached in this study.

In Portugal, Gomes (2007) analyzed the management accounting techniques used by industries in different sectors, where the lodging industry was also represented. The mostly used traditional management accounting techniques were *Budgeting*, *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*.

The USALI is a framework that 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 (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 2).

Table 2 – 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)

Santos et al. (2010) analyzed the management 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.

Development of hypotheses

In this light, the following hypotheses were developed.

Hypothesis 1: The proportion of use of traditional management accounting techniques is higher than the proportion of use of contemporary management accounting techniques in lodging industry.

The Greek hotels use more traditional management accounting techniques than contemporary management accounting techniques (Pavalatos and Paggion, 2008). Jones (2008), Phillips (1996) and Pavalatos and Paggion (2008) refer that *Budgeting* and *Budget deviation analysis* are the management accounting techniques more used in the lodging industry.

Hypothesis 2: The function chosen by most companies as a main objective of management accounting is the decision making process.

The management accounting techniques are important to support the decision making process (Oliveira et al., 2008). 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).

Hypothesis 3: Less than fifty percent of hotels use the USALI.

USALI as a framework is also gaining support particularly among multinational hotel chains. However, Faria (2007) presents that less than a half of hotels use the USALI. Pavalatos and Paggion (2007) found few national hotels utilizing de USALI in Greece.

Hypothesis 4: The Hotels that are in a competitive environment are those that use more the management accounting techniques.

The fact of company being in a highly competitive market leads to hotels use management accounting techniques (Tayles and Walley, 1997). The intensity of competition is an argument of differentiation

in industries about the use of management accounting techniques (Torrecilla et al., 1996; Downie, 1997; Shields, 1998; Williams and Seaman, 2001; Drury and Tayles, 2005).

Hypothesis 5: The larger hotels use more the management accounting techniques.

The firm size (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; Cadez and Guilding, 2008). A large firm implies management accounting techniques more complexes and sophisticated (Cadez and Guilding, 2008).

Hypothesis 6: The subsidiary hotels of foreign enterprises use more the management accounting techniques.

The subsidiaries from multinational companies tend to adopt faster the contemporary management accounting techniques. 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).

Methodology

This study 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 Escola Superior de Turismo e Tecnologia do Mar/ Instituto Politécnico de Leiria, supervised by the teachers of the scientific fields of financial accounting and management accounting. The questionnaire structure was adopted from Gomes (2007).

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

In order to characterize the management accounting at the Portuguese lodging industry we utilized the univariate analysis. The relationships defined in the hypotheses were tested by univariate and bivariate analysis, for example, we have utilized: mean, mode, Spearman's Rho, Mann-Whitney test and Kruskal-Wallis test.

Empirical 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 Porter’s competitive forces model (Porter, 1985) to analyze the five competitive forces and we added a sixth factor the influence of the Government, in order to understand the relative influence of each force in affecting the industry. We conclude that the rivalry among existing competitors is the strongest force, with a mean of 5,33, followed by the power of buyers. 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 3).

Table 3 – 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	Mean	Mode
Rivalry among existing competitors	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 or services	32	62,5%	6,3%	31,2%	3,28	2
Power of suppliers	34	14,7%	29,4%	55,9%	4,00	4
Power of buyers	34	32,4%	17,6%	50%	5,29	7
Government	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 4).

Table 4- Intensity of competitors

Intensity of competitors Scale: 1 low or negligible... 7 very high	N	<4	4	>4	Mean	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

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

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. This management accounting techniques were not utilized in hotel’s studies in other countries too (Pavlatos and Paggios, 2008).

In order to test the hypotheses proposed, we have utilized univariate analysis as well as bivariate analysis for each hypothesis.

As previously discussed, management accounting has a vast scope of techniques, some of which are considered to be traditional management accounting techniques. From these, the ones that are most used by inquiries are *Budgeting*, *Budget deviation analysis* and *Strategic Planning* (Table 5), with 76,7%, 66,7% and 66,6% respectively.

Table 5 – Traditional management accounting techniques used by inquiries

Techniques Scale: 1 no use... 7 extensive use	Obs.	<4	4	>4	Mean	Mode
Sales 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 management accounting techniques, the results are opposed to the previous ones, having almost all of the techniques a score with a score of mean use below the null value, except for the *Activity-based budgeting* with an mean of 4,23 (Table 6), followed by *Activity-based costing*, *Customer profitability analysis* and *Benchmarking*.

Table 6 – Contemporary management accounting techniques used by inquiries

Techniques Scale: 1 no use... 7 extensive use	Obs.	<4	4	>4	Mean	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

Comparing the both tables we have found that the Hypothesis 1 is not rejected. The traditional management accounting techniques are more used than contemporary techniques. Both the mean and the mode are higher in the traditional techniques.

The hotels use management accounting mainly with the purpose of supporting their decision making process and the budgeting process too (Table 7).

Table 7 – 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 8), we conclude that the functions to which this information is more adequate are Support the decision making process and Estimate cost of products/services, with a score of 5,43 and 5 respectively.

Table 8 – Adequacy of management accounting to management functions

Management functions Scale: 1 Inadequate... 7 Adequate	Obs.	<4	4	>4	Mean
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

So we can to say that the Hypothesis 2 is no rejected. The process of decision making is priority.

Concerning the use of USALI, in the Table 9 we observe that only 42.9% of the hotels use. All hotels that use USALI have got implemented management accounting. So, the Hypothesis 3 is not rejected, since only less than a half use USALI. We have verified that all the subsidiary hotels of foreign enterprises use USALI.

Table 9 – Use of management accounting and USALI

Use	USALI	Management Accounting and USALI
Yes	15 (42.9%)	15 (42.9%)
No	20 (57.1%)	20 (57.1%)

We have chosen the Mann-Whitney test, where we defined the following Hypothesis: Ho: The distribution of turnover is the same across the categories of USALI. Ha: The distribution of turnover is different across the categories of USALI. We rejected the H0 with a significance of 1%. We found that smaller hotels don't use USALI.

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, and is commonly used to describe the relation among two ordinal variables or one ordinal and other scale 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 management 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.

This correlation is positive, so we can conclude that generically, the hotels that use the traditional management accounting techniques are the ones who recognize to face a bigger competition (Table 10).

Table 10 – Association between variables that characterize competition and the utilization of traditional management 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 variation 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-						0,416 0,031			0,428 0,026

	tailed									
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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.

When analyzing *Spearman's Rho* of the contemporary management 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 0,68.

This correlation is positive, so we can conclude that generically, the hotels that use the contemporary management accounting techniques are the ones who recognize to face a bigger competition (Table 11).

Table 11 – Association between variables that characterize competition and the utilization of contemporary management 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
Balanced scorecard	Correlation coefficient Sig. (2-tailed)	0,683 0,000						0,501 0,008		
Activity-based budget	Correlation coefficient Sig. (2-tailed)			0,57 0,002						
Activity-based costing	Correlation coefficient Sig. (2-tailed)			0,644 0,000		0,472 0,013	0,518 0,006			
Target costing	Correlation coefficient Sig. (2-tailed)	0,47 0,013		0,393 0,042		0,399 0,039	0,553 0,003	0,512 0,006		
Customer profitability analysis	Correlation coefficient Sig. (2-tailed)	0,519 0,006								
Economic Value Added	Correlation coefficient Sig. (2-tailed)	0,477 0,012				0,408 0,035				0,409 0,034
Product life cycle costing	Correlation coefficient Sig. (2-tailed)			0,426 0,027		0,451 0,018	0,493 0,009	0,413 0,032		
Benchmarking	Correlation coefficient Sig. (2-tailed)	0,473 0,013		0,587 0,001						

4.1.4 – Suppliers; 4.2.1 – Price competition ; 4.2.4 – Promotion competition; 4.3.2 – Suppliers; 4.1.5 – Buyers; 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.

The Hypothesis 4 is not rejected for both kinds of management accounting techniques. Based on Porter's competitive forces model (Porter, 1985), we can say that 4 forces (Rivalry among existing competitors, Threat of new entrants, Power of suppliers and Power of buyers) influence the use of management accounting techniques significantly.

The annual sales turnover could also be a variable that influences the use of management 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 management accounting techniques. Note that some management accounting techniques have significant coefficients, bigger than 0,5 (*Sales break-even, Strategic Planning, Budgeting, Budget deviation analysis, Activity-based budgeting, Activity-based costing and Product life cycle costing*).

The Hypothesis 5 is not rejected, because several management accounting techniques are correlated with the turnover of the hotel.

Table 12 – Association between turnover and the utilization of management accounting techniques

<i>Spearman's Rho</i>		Sales
Sales break-even	Correlation coefficient Sig. (2-tailed)	0,553 0,021
Strategic planning	Correlation coefficient Sig. (2-tailed)	0,509 0,037
Budgeting	Correlation coefficient Sig. (2-tailed)	0,582 0,014
Budget deviation analysis	Correlation coefficient Sig. (2-tailed)	0,63 0,007
Product costing techniques	Correlation coefficient Sig. (2-tailed)	0,436 0,081
Product profitability techniques	Correlation coefficient Sig. (2-tailed)	0,259 0,316
Tableau de bord	Correlation coefficient Sig. (2-tailed)	0,27 0,294
Return on investment	Correlation coefficient Sig. (2-tailed)	0,29 0,259
Balanced scorecard	Correlation coefficient Sig. (2-tailed)	0,407 0,105
Activity-based budget	Correlation coefficient Sig. (2-tailed)	0,504 0,039
Activity-based costing	Correlation coefficient Sig. (2-tailed)	0,537 0,026
Target costing	Correlation coefficient Sig. (2-tailed)	0,113 0,666
Customer profitability analysis	Correlation coefficient Sig. (2-tailed)	0,186 0,475
Economic Value Added	Correlation coefficient Sig. (2-tailed)	0,107 0,683
Product life cycle costing	Correlation coefficient Sig. (2-tailed)	0,596 0,012
Benchmarking	Correlation coefficient Sig. (2-tailed)	0,361 0,155

Another aspect that was analyzed in the revision of literature was that the subsidiaries of multinational hotel chains tend to adopt the contemporary management 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 H_a : 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, except for the techniques Return of Investment, Activity based budgeting, 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 13 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 13 – According to the variable subsidiary the mean utilization of management accounting techniques

Management accounting techniques	Subsidiary of national chain	Subsidiary of multinational chain	Not subsidiary
Sales 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 budgeting	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

Conclusions

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, management accounting is a tool incorporated in the daily management practices of hotels, and useful to support the decision making process in several aspects. The Portuguese hotel managers believe in that, because most of the hotels that have answered our inquiry use management accounting techniques, with the main purpose of providing information to decision making process.

The traditional management accounting techniques are used frequently (*Sales break-even, Strategic planning, Budgeting, Budget deviation analysis, Product profitability* techniques, Tableau de bord), 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 management accounting techniques frequently more adopted by the hotels are the ones more present in the literature (Activity based costing and Activity based budgeting).

In Portugal, there is a weak use of USALI. It is not fully expanded yet across the hotels. It is more used in the large hotels and in hotels with a foreign influence.

We have tested several hypotheses, where we found some drivers of adoption of management accounting in lodging industry.

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 management 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 management 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. There is a positive moderate association between the use of management accounting and the annual turnover. We confirm the conclusions of Clarke et al. (1999), Adler et al. (2000) and Cadez and Guilding (2008).

In conclusion, we found factors that have a positive influence in the adoption of management accounting practices at hotels, and believe that there is an opportunity of analyzing in more details these findings in future research projects.

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