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# **The relationship between the management accounting techniques and the decision making in Portuguese hotels**

## **ABSTRACT**

*This study examines the hospitality decision makers' use of management accounting. The making decisions' process involves several of steps. It is need accurate information for the hotel managers make a good decision. Management accounting (MA) can provide this kind of information. A lot of MA techniques are concerned with the preparation of specialized information. We have studied the MA techniques that are currently being used by different types of Portuguese hotels, and we relate that with the importance that is given to decision making by hotel managers. The sample includes 61 hotels, which were analyzed between 2010 and 2012. We verified that the hotel managers have different behaviors regarding the use of MA techniques, which depends of their opinion about the utility of management accounting.*

**Keywords:** Management Accounting, Decision making, Lodging Industry, Portuguese Hotels.

# **A relação entre as técnicas de contabilidade de gestão e o processo de tomada de decisão nos hotéis portugueses**

*Este estudo analisa a utilização das técnicas de contabilidade de gestão pelos elementos decisores nos hotéis. O processo de tomada de decisão é constituído por diversos passos. É necessário dispor de informação cuidada para que seja tomada uma boa decisão. A contabilidade de gestão disponibiliza este tipo de informação. Muitas das técnicas de contabilidade de gestão preparam informação de forma específica. Analisamos as técnicas de contabilidade de gestão que atualmente são utilizadas nos hotéis portugueses, e relacionamos a sua utilização com a importância que é dada à tomada de decisão pelos gestores hoteleiros. A amostra incluiu 61 hotéis que foram analisados entre 2010 e 2012. Verificamos que os gestores hoteleiros apresentam diferentes comportamentos em relação à utilização das técnicas de contabilidade de gestão, ao expressar opiniões diferentes acerca da utilidade da contabilidade de gestão.*

**Palavras-chave:** *Contabilidade de gestão, tomada de decisão, indústria hoteleira, hotéis portugueses.*

## **INTRODUCTION**

This study aims to analyze the relationship between the management accounting (MA) techniques and the decision making in hotels. There are a lot of MA techniques that are very important for decision making, such as break-even point, budgeting, product costing techniques. Will the Portuguese hotel managers have the same opinion?

The hotels have been changing their management, because the environment is changing all the time. So, management accounting has also changed to provide the necessary information.

Chong (1996) thinks that accounting information reduces the uncertainty of managers in their decisions. Zounta & Bekiaris (2009) and Jawabreh (2012) refer the necessity of use the accounting information, because it will improve the decisions of hotel managers.

According to Boyd & Cox III (2002), MA techniques are used for the following decisions: pricing, offer of new products/services, discontinue of products/services, make versus buy, plant expansion, contraction of the organization and equipment purchases. How hotels have these decision-making, their managers should use the MA techniques.

The present research project as selected as object of the study, the Portuguese hotels. The sample includes 61 hotels, which were analyzed in the years 2010, 2011 and 2012. We want to know what hotel managers think about the importance of MA techniques in their decision-making.

## **LITERATURE REVIEW**

The hotels have been changing their management, because the environment is changing all the time. During the last years, the hotel industry expand and offered new services/products like rent conference facilities (Field, 2006). Zounta & Bekiaris (2009) refer a list of tourism

products: lodging service, food service and beverage service, telecommunications service, laundry service, swimming pool service, safe deposit service and health service.

Lamminmki (2008) refers that hotels face competition in different levels, such as brand image, market segment and price. It should be noted, that the competition depends of the location of the hotel, for example if there is some hotel near.

The MA techniques, according Ferreira (2002), may be divided into traditional (Budgeting; Budget deviation analysis; Product costing; Product profitability; Return on investment; Sales break-even; Strategic Planning; Tableau de bord) and contemporary (Activity-based budget; Activity-based costing; Balanced Scorecard; Benchmarking; Customer profitability analysis; Economic Value Added; Product life cycle costing; Target costing).

In Portugal, the traditional MA techniques are widely used when compared to the contemporary techniques (Gomes, 2007). Pavlatos and Paggios (2008) made a research in Greece, concerning the accounting techniques adopted by hotel units, concluding that traditional techniques have a greater use. Gomes et al. (2011) reached the same conclusion regarding the Portuguese hotels. The organizations give more importance to traditional MA techniques than to contemporary MA techniques. For several authors traditional MA techniques have a greater use if compare with contemporary MA techniques (Uyar and Bilgins, 2011). According to Fowler (2010), it doesn't mean that the contemporary techniques are irrelevant, because in several cases they are not adopted due their high costs of implementation.

## **BUDGETING**

Budgeting is the commonly wide technique used by hotels (Phillips, 1996; Jones, 2008; Pavalatos and Paggios, 2008; Uyar and Bilgins, 2011; Urquidi, 2013). 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. The budgets should not be rigid but flexible. A budget committee and a budget manual are common for Turkish hotels (Uyar and Bilgin, 2011).

### **BUDGET DEVIATION ANALYSIS**

Budget Deviation Analysis is also one of the MA techniques more used in the lodging industry (Phillips, 1996; Jones, 2008; Pavalatos and Paggios, 2008; Uyar and Bilgins, 2011). The Turkish hotels use this technique for evaluating performance and providing information. The main objectives are to find out the problems and a timely cost control (Uyar and Bilgins, 2011). Urquidi (2013) says that some hotels in Spain use this technique.

### **PRODUCT COSTING**

Product Costing is very important in a managerial accounting information system of a hotel (Zounta e Bekiaris, 2009). The main goal of costing is the accurate recording and allocation of costs to products, services and customers. The Greek luxury hotels use the costing product, but they only allocate costs to profit and cost centers. Urquidi (2013) says that some hotels in Spain also use this technique.

### **STRATEGIC PLANNING**

Strategic Planning is widely mentioned in the field of hotel management (Phillips, 1996). 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. According to Cruz (2007), planning is an essential tool for their management and budgets are a part of the process.

### **ACTIVITY-BASED BUDGET**

Activity-Based Budget has a good influence in the management of hotels like Activity-Based Costing (Cruz, 2007). It is more relevant the use of Activity-Based Costing than the

traditional cost center approach, if the hotel is using the Customer Profitability Analysis (Downie, 1997). Vaugh et al. (2010) refer that Activity-Based Costing was implemented with success in a kitchen in a Las Vegas casino, which allowed understand a hotel's cost structure. According Urquidi (2013) some Spanish hotels use this technique.

### **BALANCED SCORCARD**

Balanced Scorecard has several of measures (financial and non-financial). The hotel modern performance system should be multidimensional (Sainaghi et al., 2013). Urquidi (2013) remarks that some hotels in Spain use this technique.

### **BENCHMARKING**

Benchmarking is a common accounting technique due to the internationalization of hotel chain operations, allowing the comparison among different hotels business units (Cruz, 2007).

### **CUSTOMER PROFITABILITY ANALYSIS**

Customer profitability analysis can determine the profit contribution of customer segments or of client. Its benefits are to provide a distribution of costs and revenues by customer (Raaij et al., 2003). It has a good influence in the management of hotels (Cruz, 2007). It should be more developed (Downie, 1997). Urquidi (2013) says that some hotels in Spain use this technique. By using this technique, hotels can determine the profit contribution of clients.

### **MA TECHNIQUES AND DECISION-MAKING**

Today, for Boyd & Cox III (2002), decision-making is more difficult, because competition is bigger and high capital investment is required in many industries and there are more risks. Teles et al. (2013) say that the controller is fundamental in the decision-making. There are two kinds of decision, strategic and operational. When they analyzed the hotels in the states of Brazil like Rio Grande do Sul, Santa Catarina and Paraná, they found that the controller make more operational decisions than strategic decisions.

According to Hulle et al. (2011) the decision-making is the function most important of MA. Decision-making should be based on MA techniques or in accounting information (Williams & Seaman, 2002; Oliveira et al., 2008; Zounta & Bekiaris, 2009; Shoosmuangpak, 2011; Jawabreh, 2012). Boyd & Cox III (2002) refer that MA techniques are used for the following decisions: pricing, offer new products or discontinue products, make versus buy, plant expansion/contraction and equipment purchases. The use of cost account system, for some authors, improves the quality of decision-making (Zounta & Bekiaris, 2009; Shoosmuangpak, 2011). Zounta & Bekiaris (2009) proved this through a study to Greek Luxury Hotels. However, Jawabreh (2012) analyzed the relationship between accounting information system and decision making in four and five star Jodhpur Hotels. They didn't find any relationship, in other words, there is not a relationship between accounting information and decision making (inventory decisions, income statement decisions, investment decisions, cash related decisions, financing decision, marketing decisions, productions decisions, informed economic decisions, make dividend decisions).

Taking account Williams & Seaman (2002), there is a proliferation of new MA techniques, what provide value-added information for decision-making. The benefits of changes in MA are to produce relevant information to managers. Veeken and Wouters (2002) confirmed that higher-level managers used accounting information as an output measure, so they need the information to know what projects deserve their attention. Accounting information may be particularly informative for cost control during execution. Acquah (2013) says that MA techniques help in the definition of the business strategy of an organization and in the performance assessment.

It should be noted that Alves (2002) studied the purpose of using contemporary techniques of management accounting in Portuguese companies manufacturing, presenting three possible



purposes: decision making, planning and control. Found that most uses the techniques of contemporary management accounting are as purpose control. Specifically, benchmarking, the CBA and the target cost are used for control purposes. Already the customer profitability analysis is widely used in the monitoring and decision making, while the cycle costing product life is used in decision making, control and planning.

The hotels that compete in a market of new services, the use of the new MA techniques is greater (Zounta & Bekiaris, 2009; Doinea et al., 2011). According to Mia & Patiar (2001) there is not a big relationship between level of competition and the use of MA techniques. However there are exceptions, such as for the pricing, customer satisfaction and profitability. In these cases the managers use MA techniques for obtain information. The managers use the MA techniques for long term decisions. They use more financial indicators for the evaluation of employee performance. Jawabreh (2012) refers that the use of accounting information it is more important in environments surrounded by uncertainty, but, Williams & Seaman (2002) and Veeken and Wouters (2002) say that the uncertainty of the task not influence the use of MA. According to Lamminmki (2008), the relationship between accounting system and outsourcing decision depends of several factors.

He analyzed hotel quality, hotel competition, hotel size and hotel professional qualification. However, only the hotel professional qualification was considered statistic significant. The hotel outsourcing decision-making will be more sophisticate, in other words, it will use accounting information, if the hotel professional qualification is higher. The personal characteristics of hotel managers influence the use of accounting information in decision making (Doinea et al., 2011).

Proponents of decentralization argue that companies adopt the MA techniques when the decision-making is held by different people within the organization (Gunasekaran et al.,

1999). Sugijanto & Priyono (2013) refer that the increased of decentralization will be influence positively the decision-making.

## **HYPOTHESES**

According to the literature, we found that the traditional MA techniques have a high utilization compared to the contemporary MA techniques. The main objective of MA technique is the decision making process for the most companies. There are studies which refer that the use of MA improves the quality of decision-making. We found that MA is very important to the decision-making, so the hotel managers use a lot of MA information. However, there are a several determinants that influence the relationship between MA and decision-making.

In this study we opted to analyze the competition intensity, the perceived environmental uncertainty, the size of hotels and the decentralization.

- H1: The use of traditional MA techniques is higher than the use of contemporary MA techniques in lodging industry.
- H2: The main objective of MA is the decision making process.
- H3: The use of MA techniques improves the quality of decision-making.
- H4: The biggest users of MA techniques are the hotels whose consider that the main purpose of MA is decision-making process.
- H5: The competition influences the use of MA techniques for decision-making.
- H6: The environments surrounded by uncertainty influences the use of MA techniques for decision-making.

- H7: The size of the hotel influences the use of MA techniques for decision-making.
- H8: The decentralization influences the use of MA techniques for decision-making.

## **METHODOLOGY**

Adopting a quantitative approach, a questionnaire was developed through of personal interviews (Yin, 2009). The questionnaire structure was adopted from Gomes (2007).

The data was processed using SPSS (Statistics Packages for Social Sciences). In order to characterize the MA 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, Mann-Whitney test and Kruskal-Wallis test. According to Pestana and Gageiro (2008), in order to reduce the variables related with determinants, we conducted a factor analysis. To apply the factor analysis should be a correlation between the variables, what was analyzed in all situations. So we analyze the Kaiser-Meyer-Olking (KMO) measure of sampling adequacy and Cronbach alpha coefficient the Bartlett test of Sphericity. As we want to construct some variable, we use the, which indicates satisfactory internal reliability for the variable.

## **FINDINGS AND DATA ANALYSIS**

In this study were analyzed 61 hotels from different categories and regions from Portugal. From these, 17 belong to national chains, 2 are subsidiaries of multinational hotel chains. The annual turnover ranges from 16,000€ to 60,000,000€.

As previously discussed, MA has a vast scope of techniques, some of which are considered to be traditional MA techniques. From these, the ones that are most used by inquiries are

Budgeting, Budget Deviation Analysis and Strategic Planning (Table 1), with 81.3%, 68.7% and 69.3% respectively. This corroborates with what is described in the literature review.

**Table 1 – Traditional MA techniques used by inquiries**

Techniques Scale: 1 no use... 7 extensive use	Obs.	<4	4	>4	Mean	Mode
Sales Break-even	48	35.4	6.3	58.3	4.29	5
Strategic Planning	48	22.4	8.3	69.3	4.94	6
Budgeting	48	10.4	8.3	81.3	5.75	7
Budget Deviation Analysis	48	16.7	14.6	68.7	5.21	7
Product Costing techniques	48	37.5	12.5	50	4.15	6
Product Profitability techniques	48	33.3	10.4	56.3	4.35	6
Tableau de Bord	48	33.3	8.3	58.4	4.56	7
Return on Investment	48	35.4	6.3	58.3	4.33	1

Source: elaborated by the authors

Concerning the contemporary MA techniques, the results are opposed to the previous ones, having all the techniques a mean score of use below the null value (Table 2).

**Table 2 – Contemporary MA techniques used by inquiries**

Techniques Scale: 1 no use... 7 extensive use	Obs.	<4	4	>4	Mean	Mode
Balanced Scorecard	48	72.9	2.1	25	2.4	1
Activity-Based Budget	48	39.6	8.3	52.1	3.94	1
Activity-Based Costing	48	50	2.1	47.9	3.6	1
Target Costing	48	70.8	8.3	20.9	2.42	1
Customer Profitability Analysis	48	52.1	16.7	31.2	3.17	1
Economic Value Added	48	72.9	8.3	18.8	2.33	1
Product Life Cycle Costing	48	70.8	10.4	18.8	2.52	1
Benchmarking	48	62.5	0	37.5	2.98	1

Source: elaborated by the authors

According to the analysis between the table 1 and table 2 we have found that the **H1** is not rejected. The traditional MA techniques are more used than contemporary techniques. The mean and the mode are higher in the traditional techniques.

The hotels use MA mainly with the purpose of supporting their decision making process and the budgeting process too (Table 3).

We found that 79,2% of the hotels, users of management accounting, consider that decision making is the main purpose.

**Table 3 – Purpose of using MA**

Purpose (by order of importance)	Percentage
Decision making	79.2%
Budgeting	70.8%
Elaboration of Income and loss statement	64.6%
Support management information systems	62.5%
Estimate cost of products/services	54.2%
Calculate gross margin per product/service	52.1%
Comply with law obligations	39.6%
Pricing of products/services	37.5%
Evaluation of human resources	31.3%
Others	16.7%

Source: elaborated by the authors

So we can say that the **H2** is not rejected. The process of decision making is priority.

Taking into account that the information supplied by management accounting is adequate to several management functions (Table 4), we conclude that the functions to which this information is more adequate are to support the decision making process and to estimate cost of products/services, with a mean score of 5.87 and 5.66 respectively.

**Table 4 – Adequacy of MA to management functions**

Management functions Scale: 1 Inadequate... 7 Adequate	Obs.	<4	4	>4	Mean	Mode
Estimate cost of products/services	38	5,3%	7,9%	86,8%	5,66	6
Pricing of products/services	38	15,8%	26,3%	57,9%	4,76	4
Decision making	38	0%	10,5%	89,5%	5,87	6
Evaluation of human resources	38	55,3%	10,5%	34,2%	3,61	1
Profitability of products and services	38	18,4%	15,8%	65,8%	4,87	6
Profitability of customers	38	26,3%	21,1%	47,4%	4,32	5
Profitability of markets	38	21,1%	23,7%	55,2%	4,5	4

Source: elaborated by the authors

Through the Mann-Whitney test, we defined Ho: The distribution of adequate MA is the same across the categories of users of MA for decision making. Ha: The distribution of adequate is different across the categories of users of MA for decision-making. We found that there are a different opinion about the suitability of MA in managers who use MA for decision-making and those who not use MA for decision-making.

We also performed a comparison of use of MA techniques based on the average between two groups (the users of MA for decision-making and the not users of MA for decision-making), where we found that the suitable is higher in the group of users of MA for decision making. So we do not reject H3.

Analyzing the mean of use of MA techniques (Table 5), we cannot say that they are most used when the purpose is for decision-making. It depends of techniques. There is not a rule. If we compare the users and not users of MA for decision-making, we found that the users of MA for decision-making use more Sales Break-even, Budgeting, Activity-Based Budget, Target Costing, Customer Profitability Analysis and Economic Value Added.

**Table 5 - Mean of use of MA techniques for and nor for decision-making**

Techniques Scale: 1 no use... 7 extensive use	Obs.	For decision making Mean	Not for decision making Mean
Sales Break-even	48	4.34	4.1
Strategic Planning	48	4.87	5.2
Budgeting	48	5.79	5.6
Budget Deviation Analysis	48	5.13	5.5
Product Costing techniques	48	4.03	4.6
Product Profitability techniques	48	4.29	4.6
Tableau de Bord	48	4.47	4.9
Return on Investment	48	4.29	4.5
Balanced Scorecard	48	2.32	2.7
Activity-Based Budget	48	4	3.7
Activity-Based Costing	48	3.32	4.7
Target Costing	48	2.47	2.2
Customer Profitability Analysis	48	3.47	2
Economic Value Added	48	2.5	1.7
Product Life Cycle Costing	48	2.39	3
Benchmarking	48	2.89	3.3

Source: elaborated by the authors

We have chosen the Mann-Whitney test, where we defined the following Hypothesis: Ho: The distribution of use MA techniques is the same across the categories of decision making. Ha: The distribution of use MA techniques is different across the categories of decision-making. We do not rejected the H0. The use of MA accounting is the same in the hotels that use MA for decision-making or not. In other words the differences are not significant, except

for Customer Profitability Analysis where the use is different with a significance level of 0.05.

So we reject **H4** for all MA techniques, except for Customer Profitability Analysis.

In order to analyze the intensity of competition, taking into account the importance that is given to management accounting for decision-making, we compare the mean of levels of competition between the two groups through the table 6.

**Table 6 - Mean of levels of competition**

	MA for decision making	MA not for decision making
Price	5.71	5.7
Labor force	3.47	4.2
Buying of goods	3.08	2.8
Promotion	4.53	4.6

Source: elaborated by the authors

We have chosen the Mann-Whitney test, where we defined the following Hypothesis: Ho: The distribution of intensity of competition is the same across the categories of decision making. Ha: The distribution of intensity of competition is different across the categories of decision-making. We do not reject the H0. The intensity of competition is the same in the hotels that use MA for decision-making or not (Table 6). So we reject **H5**.

The perceived environmental uncertainty can be measure by several variables. We have opted by the power of the forces affecting the industry from Porter (1985), the external environment faced by the company in terms of homogeneity and heterogeneity, the degree of expansion of the main market where the company operates. These last two issues have already been used by Ferreira (2002). We created the variable power forces, through of the six items (rivalry among existing competitors, threat of new entrants, threat of substitute products or services, power of suppliers, power of buyers, government). So we analyzed, the Kaiser-Meyer-Olking (KMO) measure of sampling adequacy was 0.66 and the Bartlett test of Sphericity was

82.068,  $p < 0,001$ . The Cronbach alpha coefficients were 0.725 for the power (power forces), which indicates satisfactory internal reliability for the variable. So, we can construct the variable power, calculated by the arithmetic mean of the six individual variables that characterize the power of the forces affecting the industry. We created the variable environment, through of the three items (customers, competitors and market). So we analyzed, the Kaiser-Meyer-Olking (KMO) measure of sampling adequacy was 0.566 (it is bad but allowable) and the Bartlett test of Sphericity was 50.066,  $p < 0,001$ . The Cronbach alpha coefficients were 0.736 for the environment (homogeneity and heterogeneity of the environment), which indicates satisfactory internal reliability for the variable. So, we construct the variable environment, calculated by the arithmetic mean of the three individual variables that characterize the environment of the industry. The third variable (the degree of expansion of the main market) it was a taking account the question that it was made to the hotel managers.

If we compare the two groups (the users of MA for decision making and the not users of MA for decision-making) about the power, environment and expansion, we find that the mean is higher in the users of MA in the case of environment and expansion (Table 7). Regarding the variable power, the situation is reversed.

**Table 7 - Mean of the perceived environmental uncertainty of hotels**

	MA for decision making	MA not for decision making
Power	4.63	4.81
Environment	4.84	4.63
Expansion	4.71	4.2

Source: elaborated by the authors

We chose the Mann-Whitney test, to confirm, if there any difference between the two groups. Thus, we defined the following Hypothesis: Ho: The distribution of power/environment/expansion is the same across the categories of use MA for decision-



making. Ha: The distribution of power/environment/expansion is different across the categories of use of MA for decision-making.

We do not reject the H0 with a significance of 5%. We cannot find a significant difference between the two groups. So we reject **H6**.

According to the variable size, we have compared the means of sales and number of employees. We found the hotel users of MA for decision making are the smallest (Table 8).

**Table 8 - Mean of the size of hotels**

	MA for decision making	MA not for decision making
Sales	3 709 671.39	14 144 000.00
Employees	64.34	195.56

Source: elaborated by the authors

According with the Mann-Whitney test, we defined the following Hypothesis: Ho: The distribution of size is the same across the categories of decision making. Ha: The distribution of size is different across the categories of decision-making. We do not reject Ho, so there is not a significant difference. However, the hotels that use MA for decision-making are the small ones. So we reject **H7**.

On the variable that study the hierarchical level to which the decision is made, when the value is near of seven, it means that the decision made is done at the level of top management. According to the use of MA for decision-making, we find that the use of MA in decision-making is higher when the decisions are decentralized, for example, they are taken at the level of operational management. However the difference is not significant, through the Mann-Whitney test.

We analyzed the kind of decisions through the table 9.

**Table 9 – Kinds of decision**

	Frequency	Percent
Makes decisions quickly and communicates to his subordinates firmly	21	43.8
Makes decisions quickly but tries to explain all the reasons before moving	16	33.3
Do not make decisions before consulting their subordinates	5	10.4
Presents the problem to the group and try to get a consensus	6	12.5

Source: elaborated by the authors

We have chosen the Kruskal-Wallis test, which is used to test the equality hypothesis (Pestana and Gageiro, 2008). We have defined the following hypothesis: H0: The distribution of the use of MA techniques among all types of decisions is equal in central tendency, and Ha: The distribution of the use of MA techniques among all types of decisions is 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 Budgeting, Budget Deviation Analysis, Product Life Cycle Costing and Activity based budgeting, where the null hypothesis is rejected to a significance level of 0.05. In the four groups considered, these techniques have a different central tendency. We identified that the management accounting techniques are most effective when the decision is taking only after consulting their subordinates. So we do not reject H8.

However, there are many other functions that are used for management accounting, where the rate is above 50% (Budgeting, Elaboration of Income and loss statement, Support management information systems, Estimate cost of products/services, Calculate contribution margin per product/service. The hoteliers consider these very important functions. Thus, we decided to analyze whether the use of management accounting techniques have significant differences.

When the hotel managers say that MA it is important for budgeting, choosing the Mann-Whitney test, where we defined the following Hypothesis: Ho: The distribution of use of MA techniques is the same across the categories of budgeting. Ha: The distribution of use of MA techniques is different across the categories of budgeting. The H0 is rejected for budgeting (6.29; 4.43), Budget Deviation Analysis (5,71; 4) and benchmarking (3.41; 1.93). We found when budgeting is a purpose of MA, these three techniques are more used.

When the hotel managers say that MA it is important for elaboration of income and loss statement, choosing the Mann-Whitney test, where we defined the following Hypothesis: Ho: The distribution of use of MA techniques is the same across the categories of elaboration of income and loss statement. Ha: The distribution of use of MA techniques is different across the categories of elaboration of income and loss statement. The H0 is rejected for Tableau de Bord (5.16; 3.47), Return on Investment (5.03; 3.01), Activity-Based Costing (4.29; 2.35) and Product Life Cycle Costing (3; 1.65). We found when income and loss statement is a purpose of MA, these four techniques are more used.

When the hotel managers say that MA it is important for Support management information system, choosing the Mann-Whitney test, where we defined the following Hypothesis: Ho: The distribution of use of MA techniques is the same across the categories of Support management information system. Ha: The distribution of use of MA techniques is different across the categories of Support management information system. The H0 is rejected for Budgeting (6.3; 4.83), Budget Deviation Analysis (6; 3.89), Product Profitability techniques (4.83; 3.56), Tableau de Bord (5.3; 3.33), Return on Investment (5; 3.22) and Benchmarking (3.5; 2.11). We found when income and loss statement is a purpose of MA, these four techniques are more used.

When the hotel managers say that MA it is important for Estimate cost of products/services, choosing the Mann-Whitney test, where we defined the following Hypothesis: Ho: The distribution of use of MA techniques is the same across the categories of Estimate cost of products/services. Ha: The distribution of use of MA techniques is different across the categories of Estimate cost of products/services. The H0 is not rejected.

When the hotel managers say that MA it is important for Calculate contribution margin per product/service, choosing the Mann-Whitney test, where we defined the following Hypothesis: Ho: The distribution of use of MA techniques is the same across the categories of Calculate contribution margin per product/service. Ha: The distribution of use of MA techniques is different across the categories of Calculate contribution margin per product/service. The H0 is not rejected.

## **CONCLUSIONS**

The hotels have been modifying their management, because the environment is constantly changing. MA techniques have evolved in the recent years in the various hotels. It is important the use of MA information to allow the optimization of the decision making processes by hotel managers, due to the fact of them facing different kinds of competition and them facing environments surrounded by uncertainty. The traditional MA techniques are used frequently (*Strategic planning, Budgeting, Budget Deviation Analysis*), what corroborates with several authors cited in the literature.

In the Portuguese hotels the traditional MA techniques are used frequently (*Strategic planning, Budgeting, Budget Deviation Analysis*), what corroborates with several authors cited in the literature. Nevertheless, the contemporary MA techniques frequently more adopted by the hotels are the ones more present in the literature (Activity based costing and Activity based budgeting).

MA techniques are used in Portuguese hotels especially for decision-making, accordingly with the answers of our inquiry. Taking into account if the information supplied by management accounting would be adequate to several management functions, we verified more adequacy for Support the decision process and Estimate cost of products/services.

We have tested if the hotels who say the main purpose of MA is decision-making, they will be the highest users of MA techniques. According to the tests that were done we cannot find differences significant. In other words, there are not differences in the use of MA if we compare the two groups based on the purpose of decision-making for MA. However, the situation will be different if we analyze the kinds of decisions realized by the hoteliers. If the hotel managers only make decisions after consulting their subordinates, we will find differences significant. This kind of decision uses more MA techniques (Budgeting, Budget Deviation Analysis, Product Life Cycle Costing and Activity based budgeting). It is important to refer that when the decision is made at the level operational management the use of MA techniques is higher.

We tested several hypotheses where we try to find determinants that influence the use of MA techniques for decision-making, such as competition, environment surround by uncertainty, size and decentralization of the decisions. Based on Mann-Whitney test, we cannot find a relationship between these determinants and the use of MA techniques for the decision-making. Thus, we confirm that there is not a big relationship between level of competition and the use of MA techniques an idea previously transmitted by Mia & Patiar (2001). We also confirm that the uncertainty of a task does not imply the use of MA, an idea already mentioned by William & Seaman (2002) and Veeken and Wouters (2002). We corroborate with Lamminki (2008) in respect to the relationship between size and use of MA for decision-making.

Concerning to the others purposes indicated by the hoteliers we find differences significant in the use of MA for that objective. By other words, the hotels that consider budgeting, income and loss statement and support management information system use more some MA techniques.

In conclusion, we found that when the decision is made with the help of the subordinates, there is a greater use of MA techniques. We believe that there is an opportunity of analyzing in more details these findings in future research projects.

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