

An empirical investigation of strategic management accounting in hotels

Odysseas Pavlatos

*Department of Business Administration,
Technological Educational Institute of Athens, Athens, Greece*

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Abstract

Purpose – The purpose of this paper is to investigate the relationship between contextual factors, strategic management accounting (SMA) and historical performance in hotels.

Design/methodology/approach – An empirical survey was conducted on a sample of 106 leading hotels in Greece.

Findings – The analysis of the survey data indicates that seven contingent factors affect SMA usage in hotels: The seven factors are perceived environmental uncertainty, structure, quality of information system (IS) information, organizational life cycle stage, historical performance, strategy and size. The findings also indicate that lagging performance affects SMA and that this effect is moderated by the perceived environmental uncertainty.

Research limitations/implications – Some of the limitations are inherent to the survey method used, such as the use of perceptual measures and the potential of common method bias. Data were collected from the Greek hospitality industry, and consequently, the results may be generalizable only to that population.

Practical implications – The accounting professionals and hotel managers will also be benefited, as the study aims to identify the most relevant SMA tools adopted in the hotel industry, as well as the relationship between these tools and other external and organizational factors.

Originality/value – This research adds to the current knowledge in management accounting system design in hotels. This paper increases the understanding as to why hotels are more likely to implement SMA. The results provide the first empirical evidence of the relation between SMA usage, organizational factors, external factors and historical performance in hotels.

Keywords Performance, Greece, Contingent factors, Management accounting innovation, Management accounting practices, Strategic management accounting

Paper type Research paper

1. Introduction

Over the past three decades, there has been a tremendous increase in the number of innovative management accounting techniques which were developed across a wide range of industries (Abdel-Kader and Luther, 2008). Just recently, it was discovered that the management accounting innovations were part of strategic management accounting (SMA) (Zawawi and Hoque, 2010).

Simmonds (1981) was the first to use the term “strategic management accounting”. He determined it as “the provision and analysis of management accounting data about a business and its competitors for use in developing and monitoring the business strategy” (Simmonds, 1981, p. 26). The past few years have seen a growing interest in SMA. Nevertheless, “very little has been achieved in terms of empirical enquiry



designed to further our appreciation of the nature and the context of SMA application” (Cadez and Guilding, 2008, p. 856).

Management accounting literature suggests that there is a need for more research into service organizations on management accounting system (MAS) design and contextual factors, as these firms become increasingly important within most economies (Chenhall, 2003; Auzer and Langfield-Smith, 2005; Modell, 1998).

Management accounting literature demonstrates that MASs are equally important in service organizations and that MAS of service organizations must be considered in their wider context, which includes accounting for contingent variables external and internal to the service organizations (Sharma, 2002).

The hotel industry is particularly pertinent to the examination of SMA practices. First, the hotel industry is market-oriented (Kotas, 1999), which has been found to be more conducive to SMA usage (Cadez and Guilding, 2008). Second, Collier and Gregory (1995) concluded that SMA is increasingly being adopted in hotels (high number of SMA adopters). Third, Potter and Schmidgall (1999) make the assumption that little innovation has occurred in hospitality management accounting, and there are many issues that deserve research attention. Finally, there is an active interest in management accounting practices of hotels (McManus, 2012; Pavlatos and Paggios, 2009a, 2009b; Anderson and Guilding, 2006).

The study’s objectives are as follows:

- to investigate the application of SMA techniques in hotels;
- to analyze factors that influence the adoption and usage of SMA in a hotel context; and
- to investigate the impact of historical performance on SMA design in hotels.

The aim of this research is to examine the relationship between contextual factors, SMA and historical performance in hotels.

2. Literature review and hypotheses development

Despite having been introduced into the literature as a potentially exciting development over 20 years ago, there is still little or no agreement about what constitutes SMA. Finally, Cadez and Guilding (2008) identified 16 SMA techniques from the literature. The literature search reveals little prior empirical work concerned with the application of SMA techniques in a service context.

In the hotel management literature, there has also been little work too place with regard to SMA (Collier and Gregory, 1995). These studies have mainly focused on customer-focused accounting (a part of SMA) (McManus, 2012; Anderson and Guilding, 2006).

Figure 1 provides an overview of the framework of the study. Regarding the selection of the independent variables, management accounting literature suggests that there are a lot of contingent factors that affect MAS and SMA (Chenhall, 2003; Cadez and Guilding, 2008).

First, contingent variables, such as perceived environmental uncertainty and structure have been reported in prior research as influential factors of the design of MAS in hotels (McManus, 2012; Pavlatos, 2010; Pavlatos, 2012; Sharma, 2002). Perceived environmental uncertainty plays an equally, if not more, important role in service organizations than in manufacturing firms because service firms have greater exposure to the external environment (Sharma, 2002). Brignall (1997) suggests that the volatility, uncertainty and competition in a service firm’s external environment cause complexity

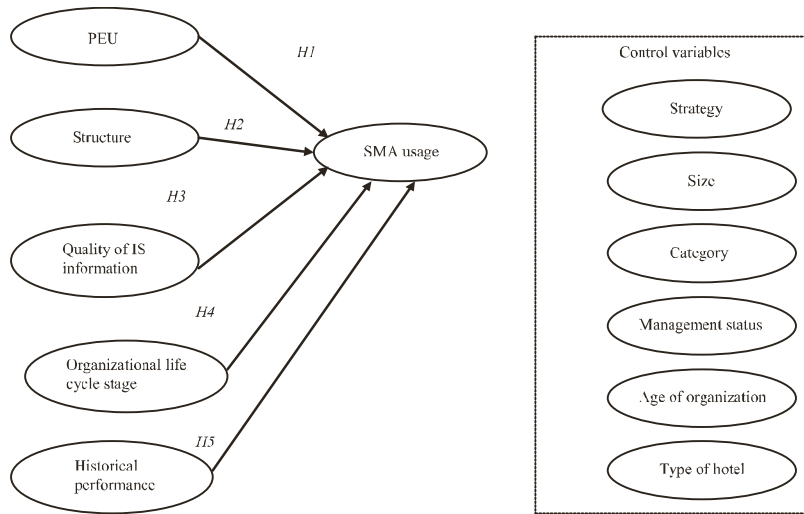


Figure 1. Research model and expected significant paths

and influence the design of MASs. Hence, SMA information can assist hotel managers in coping with the complexities of their external environment.

Organizational structure is likely to play a positive role to the extent of usage of SMA tools in hotels. Hotels which are more decentralized are likely to require a greater volume of information at lower levels of management to assist in decision-making as opposed to centralized hotels.

Furthermore, quality of information system (IS) information is expected to contribute to the extent to which SMA is used by hotels. Pavlatos and Paggios (2009a) found that there is a relationship between quality of IS information and cost system design in hotels. Management accounting suggests that improvements in information quality increase the usefulness of decision systems and the usage of management accounting techniques.

Organizational life cycle stage has been reported in prior studies as a main factor of the MAS design in service firms (Auzer and Langfield-Smith, 2005; Brignall, 1997; Brignall *et al.*, 1991; Moores and Yuen, 2001). Kallunki and Silvola (2008) report that greater organizational size and greater resources are expected to result in greater usage of innovative management accounting techniques among firms in the maturity stage as opposed to firms in the growth phase.

Performance management literature suggests that there is a relationship between performance management system design and previous performance in services (see Naranjo-Gil *et al.*, 2009 for a review). Based on the above discussion, the following hypothesis will be tested in the research:

- H1. SMA usage is higher in hotels perceiving a higher degree of environmental uncertainty than in hotels that perceive lower environmental uncertainty.
- H2. SMA usage is higher in decentralized hotels than in centralized hotels.
- H3. There is a positive association between the quality of IS information and the SMA usage in hotels.

H4. SMA usage is greater among hotels in maturity phase than among hotels in a growth phase.

H5. SMA usage is higher in hotels that have a relatively low historical performance than in hotels that have a relatively high historical performance.

Based on previous studies, we predict that a negative effect of previous performance on SMA usage will be established. In this study, we predict that perceived environmental uncertainty, structure, organizational life cycle stage and quality of IS information will moderate the effect of past performance on SMA usage. Hence, we propose the following hypotheses:

H6a. The negative impact of past performance on SMA usage is more common for hotels realizing a higher level of environmental uncertainty.

H6b. The negative impact of past performance on SMA usage is more common for decentralized hotels.

H6c. The negative impact of past performance on SMA usage is more common for hotels in maturity phase.

H6d. The negative impact of past performance on SMA usage is more common for hotels that provide improved IS information quality.

3. Research methodology

To test the relations among SMA techniques, contingent factors and historical performance, empirical data were collected from the Greek hotel industry. The survey instrument was sent by email to 320 large Greek hotels which are included in the Gallup's subsidiary in Greece (ICAP) database. A total of 106 hotels fully completed and returned the questionnaire, yielding a 33 per cent response rate. Tests for non-response bias were performed. Chi-square tests indicated no significant differences in the demographic characteristics.

"SMA usage" was measured using five constructs to account for the multi-level character of SMA practices drawing on the scale by Cravens and Guilding (2001). It was slightly adapted to be understandable in the hotel context. Based on the premise that "exploratory factor analysis can contribute to a useful heuristic strategy for model specification prior to cross-validation with confirmatory factor analysis" (Cadez and Guilding, 2008, p. 824) factor analyses were used. The factor analyses provide evidence for discriminant validity of the five constructs. Hence, we used the five constructs (11 techniques were collapsed into five SMA dimensions), which formed a multi-dimensional construct.

"Quality of IS information" was measured by Dunk (2004), as a five-item, seven-point Likert-scaled instrument. "Organizational life cycle stage" was measured by Auzer and Langfield-Smith (2005). "Structure" was measured by Gordon and Narayanan (1984), as a six-item, seven-point Likert-scaled, fully anchored instrument. "Perceived environmental uncertainty" was measured by Gordon and Narayanan (1984), as a seven-point Likert-scaled, fully anchored instrument. It was slightly adapted to be understandable in the hotel context.

"Historical performance" was measured using objective data. We obtained performance data for the three years before the research was conducted from the Association of Greek Tourism Enterprises and Hellenic Chamber of Hotels. To measure the hotel performance correctly, we studied the hospitality management literature

(O'Neill and Mattila, 2004; Pine and Phillips, 2005; Sainaghi, 2011). According to Harris (1999), hoteliers monitor the management of their firm via revenue, rather than profit metrics (revenue accounting).

Hence, we used the following five performance items, according to Kim *et al.* (2013):

- (1) Average room rate (ARR);
- (2) Revenue per available room (RevPAR);
- (3) Total revenue per available room (TrevPAR);
- (4) Restaurant food and beverage (F&B) revenue per occupied room; and
- (5) Banquet F&B revenue per occupied room (Table I).

We included a number of control variables and specific industry factors (strategy, size, management status, age of the organization, category and type of hotel). "Organizational strategy" used Porter's measurement (Porter, 1980). "Size" was measured using the number of beds adopted by Tavitiyaman *et al.* (2012). The variable "Age of the organization" was measured by Kallunki and Silvola (2008). "Category of hotel" (5 stars = 48 hotels, 4 stars = 60 hotels), "Management status" (membership of multinational chain = 20 hotels, membership of national chain = 32 hotels, private = 54 hotels) and "Type of hotel" (resort = 42 hotels, city = 64 hotels) were measured as categorical variables adopted by Pavlatos and Paggios (2009b).

Variable	N	Mean	SD	Theoretical minimum	Theoretical maximum	Actual minimum	Actual maximum
SMA usage	106	4.11	0.66	1	7	1	7
Quality of IS information	106	4.02	0.38	1	7	1	7
Organizational life cycle stage ^a	106	0.64	0.48	0	1	0	1
Perceived environmental uncertainty	106	4.32	0.72	1	7	2	7
Structure	106	4.05	0.54	1	7	1	7
Historical performance (€)	106	79.12	35.3	–	–	53.24	135.42
<i>Control variables and specific industry factors</i>							
Strategy	106	4.87	0.55	1	7	1	7
Size (number of beds)	106	329.12	239.51	–	–	85	1185
Management status ^b	106	0.18	0.39	0	1	0	1
Age of the organization	106	29.12	15.12	–	–	3	48
Category ^c	106	0.45	0.50	0	1	0	1
Type of hotel ^d	106	0.39	0.49	0	1	0	1

Notes: ^aOrganization life cycle is a categorical variable. It was translated as a dummy variable that reflected whether a sampled organization belongs to the maturity stage; ^bmanagement status is a categorical variable. It was translated as a dummy variable that reflected whether a sampled organization is member of a multinational chain; ^ccategory is a categorical variable. It was translated as a dummy variable that reflected whether a sampled organization is a 5-star hotel; ^dtype of hotel is a categorical variable. It was translated as a dummy variable that reflected whether a sampled organization is a resort

Table I.
Descriptive statistics of the variables in the study

4. Data analysis and results

We test the research model using partial least squares (PLS). As shown in Table II, all internal composite reliabilities (ICRs) exceeded 0.8, indicating satisfactory reliability of the constructs in the model (Hulland, 1999). Additional support for reliability is provided by Cronbach's alphas. The average variance extracted (AVE) by the latent constructs from their indicators exceeded the recommended criterion of 0.50 for all variables (Fornell and Larcker, 1981). Results showed that discriminant validity was also satisfactory, as in all cases, the AVE was higher than the squared correlation.

In analyzing our results with PLS, we first ran the model with main effects only, and then, we analyzed the full model including the interaction effects. Table III presents the path coefficients, *t*-values observed with the level of significance achieved and the proportion of explained variance of the endogenous variable (R^2) for the whole sample ($n = 106$). Figure 2 shows the significant path coefficients for the full model.

We conducted several robustness checks to validate our findings. Particularly, we performed a regression analysis for the full model receiving similar results. Furthermore, we investigated the interaction effects of perceived environmental uncertainty, structure, organizational life cycle stage and quality of IS information on SMA usage. Results show that none of the interactions are significant.

5. Conclusion and discussion

This study responds to recent calls to analyze factors that influence the adoption and usage of management accounting innovation and SMA (Naranjo-Gil *et al.*, 2009; Cadez and Guilding, 2008). According to Naranjo-Gil *et al.* (2009, p. 688) "future research in needed to examine other factors to add a more comprehensive view of management accounting innovation".

According to the survey's results, seven factors were identified as potentially affecting SMA usage in hotels. The seven factors are as follows:

- (1) perceived environmental uncertainty;
- (2) organizational structure;
- (3) quality of IS information;
- (4) organizational life cycle stage;
- (5) historical performance;
- (6) strategy; and
- (7) size.

The results show that hotels realizing a higher degree of environmental uncertainty use more SMA tools to help them reduce uncertainty and improve managerial decision-making, managerial planning and control, as opposed to hotels that realize a lower level of environmental uncertainty. The results for perceived environmental uncertainty indicate that hotels align SMA usage in varying degrees, depending on whether the environment is turbulent, competitive or unpredictable. In practical terms, the results imply that management of hotels respond to increased environmental uncertainty by increasing the SMA usage. This enables them to enhance their competitiveness and control the issues before they become increasingly difficult to

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Variable	ICR ^a	Alpha ^b	AVE ^c	Item	Loading
Costing	0.814	0.79	0.601	Life cycle costing	0.759
				Value chain costing	0.734
Planning, control and performance measurement	0.821	0.78	0.612	Benchmarking	0.734
				Integrated performance measurement	0.752
Decision-making	0.834	0.79	0.634	Strategic costing	0.824
				Strategic pricing	0.834
Competitor-focused accounting	0.842	0.81	0.641	Competitor cost assessment	0.814
				Competitive position motoring	0.819
				Competitor performance appraisal	0.839
Customer accounting	0.819	0.77	0.639	Customer profitability analysis	0.816
				Valuation of customers as assets	0.836
SMA usage	0.842	0.804	0.654	Costing	0.802
				Construct of higher order of the five SMA usage dimensions	0.814
Quality of IS information	0.885	0.856	0.703	Decision-making	0.792
				Competitor-focused accounting	0.799
				Customer accounting	0.805
				Accuracy	0.895
				Precision	0.858
				Reliability	0.838
				Completeness	0.822
Perceived environmental uncertainty	0.832	0.814	0.624	Relevance	0.864
				Price competition	0.821
				Economic (external) environment	0.801
				New services by industry	0.791
				Market activities of competitors	0.812
				Tastes and preferences of customers	0.824
				Legal, political and economic constraints surrounding firm	0.724
Structure	0.822	0.802	0.632	Initiating ideas for new services	0.824
				Hiring and firing managerial personnel	0.824
				Budgeting allocations	0.812
				Pricing decisions	0.804
				Selecting large investments	0.814
				Operating decisions are made at manager level	0.834
Historical performance	0.851	0.819	0.689	ARR	0.812
				RevPAR	0.834
				TrevPAR	0.862
				Restaurant F&B revenue per occupied room	0.833
				Banquet F&B revenue per occupied room	0.824

Table II.
Reliability and validity analysis of multi-item constructs ($n = 106$)

Notes: ^aInternal composite reliability; ^bcronbach's alpha; ^cAVE

Path to: Path from:	SMA usage Path coefficient	Cohen's f^2	
<i>A. Main effects model</i>			
Perceived environmental uncertainty	0.290* (2.984)	0.27	Supported <i>H1</i>
Structure	0.203* (2.046)	0.20	Supported <i>H2</i>
Quality of IS information	0.228* (2.315)	0.22	Supported <i>H3</i>
Organizational life cycle stage	0.204* (2.052)	0.20	Supported <i>H4</i>
Historical performance	-0.264* (2.634)	0.25	Supported <i>H5</i>
<i>Control variables and specific industry factors</i>			
Strategy	0.229* (2.412)	0.23	
Size	0.184* (2.064)	0.17	
Age of the organization	0.132 (0.154)		
Management status	0.152 (0.168)		
Category	0.182 (0.211)		
Type of hotel	0.104 (0.102)		
	$R^2 = 0.291$		
	$Q^2 = 0.016$		
<i>B. Full model (interactions effects)</i>			
Perceived environmental uncertainty	0.272* (2.815)	0.25	Supported <i>H1</i>
Structure	0.194* (2.146)	0.18	Supported <i>H2</i>
Quality of IS information	0.250* (2.507)	0.22	Supported <i>H3</i>
Organizational life cycle stage	0.201* (2.054)	0.20	Supported <i>H4</i>
Historical performance	-0.215* (2.134)	0.21	Supported <i>H5</i>
Historical performance \times Perceived environmental uncertainty	-0.261* (2.614)	0.24	Supported <i>H6a</i>
Historical performance \times Structure	-0.105 (0.109)		No Supported <i>H6b</i>
Historical performance \times Organizational life cycle stage	-0.144 (0.144)		No Supported <i>H6c</i>
Historical performance \times Quality of IS information	-0.180 (0.155)		No Supported <i>H6d</i>
<i>Control variables and specific industry factors</i>			
Strategy	0.218* (2.205)		
Size	0.182* (2.054)		
Age of the organization	0.143 (0.154)		
Management status	0.154 (0.168)		
Category	0.192 (0.201)		
Type of hotel	0.102 (0.119)		
	$R^2 = 0.343$		
	$Q^2 = 0.014$		

Notes: *Indicates correlations is significant at the 0.05 level (two-tailed); significance tests are two-tailed; t -values are in parentheses; Cohen's f^2 indicates effect sizes that are small (0.02); medium (0.15) or large (0.35)

Table III.
Results from PLS
analysis ($n = 106$)

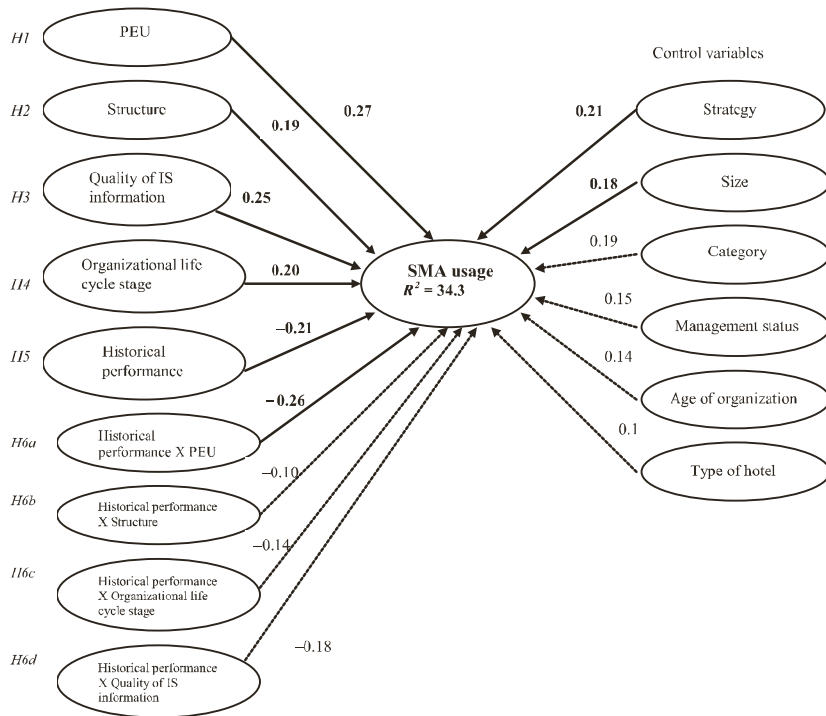


Figure 2.
PLS full model
(N = 106)

manage. [Chenhall \(2003\)](#) reported that the external environment is a strong contextual variable of contingency-based research.

It has also been found that SMA usage is related to hotel structure. Hotels characterized as decentralized use more SMA tools than hotels characterized as centralized. Hotels that have devolved authority for decision-making to lower-level managers require more SMA information. Decentralized hotels have a greater need for SMA techniques, as these provide additional information to help lower-level managers in their decision-making processes.

The study reveal that quality of IS information plays a positive role in the usage of SMA tools in many hotels. Improved IS information quality should have accuracy, relevance, precision, reliability and completeness properties, which should further help managers use more contemporary management accounting techniques. [Nicolaou et al. \(1995\)](#) reported that improvements in information quality increase the use and efficacy of decision systems.

Moreover, the results indicate that the use of SMA techniques is far much greater in hotels at maturity phase than those in growth phase. In this context, mature hotels analyze competitor positions within the industry more, use more cost data based on external information and analyze strategic factors in the pricing decision process. Furthermore, we conclude that SMA usage is higher in hotels that have a low performance in the previous period than in hotels that have a high performance in the previous period.

The findings also indicate that lagging performance affects SMA usage and that this effect is moderated by the perceived environmental uncertainty. While, on average, hotels with lagging performance are more likely to use SMA, this effect of previous performance is more common for hotels perceiving higher degree of environmental uncertainty. These hotels use more SMA tools to improve managerial planning and controlling as compared to hotels perceiving lower degree of environmental uncertainty. The survey revealed that structure, organizational life cycle stage and quality of IS information do not moderate the impact of previous performance on SMA usage.

However, the findings presented in this paper are subject to a number of limitations. First, data were collected from the Greek hospitality industry, and consequently, the results may be generalizable only to that population. Furthermore, the variables “size” and “age of organization” have high standard deviations. The bias of the sample could disrupt the results. Finally, measurement of “structure” says little about whether decisions were decentralized or not, but rather indicates whether they were taken at the “appropriate level”.

This study extends prior research in several ways. First, this research adds to the knowledge in MAS design in hotels. It provides a conceptual presentation of SMA in a hotel context that extends prior SMA literature in hotels (Collier and Gregory, 1995; McManus, 2012). Furthermore, this research examined the contingent factors according to the management accounting literature and its effect in SMA design in hotels. The results provide the first empirical evidence of the relation between SMA usage, organizational factors, external factors and historical performance in hotels. Furthermore, this study fills an empirical gap that exists and concerns how SMA systems operate under environmental uncertainty, which is mainly driven by recession and economic crisis. It should be reported that data were collected from Greece, which is under recession for the past 5 years. Moreover, this research enhances the understanding of management accounting practices among firms in Greece.

The accounting professionals and hotel managers will also be benefited, as the study aims to identify the most useful SMA tools adopted in the hotels and also the relationship between these tools and other external and organizational variables. Finally, this study could help professionals develop new directions in designing MAS systems in hotels. Future research should consider examining the relationship between SMA and top executives’ characteristics (chief executive officers and chief financial officers) in hotels. Finally, other innovative management accounting tools in hotels should also be examined (e.g. value-based management).

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