Quality practices in travel agencies

A mediating factor in non-financial indicators of advanced information systems

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Abstract

Purpose – The purpose of this paper is to examine the motivations for the adoption of quality management practices (QMPs) and the effects exerted by the advanced management information systems (AMIS) as mediating factors in a sector consisting of highly competitive companies with a high mortality rate in recent years: travel agencies.

Design/methodology/approach – The results were based on a survey completed by 185 travel agencies with less than 50 employees, covering over 5 per cent of the SME travel agencies in Spain. Structural equation modelling was used to analyse the links between the studied dimensions.

Findings – The findings indicate that QMPs have a positive, direct influence on the adoption of AMIS and that the adoption of AMIS has a positive, direct impact on financial performance. The results suggest that quality policies facilitate greater use of financial indicators but not in the use of non-financial indicators, where the key to better business performance lies.

Originality/value – Therefore, the results of this paper indicate that being proactive about quality practices can provide travel agencies a great number of benefits through the implementation of AMIS.

Keywords Information systems, Firm's performance, Quality management practices, Travel agencies

Paper type Research paper

1. Introduction

The implementation of quality management practices (QMPs) in enterprises and the way in which their use has affected business performance have been widely studied over the last few years. Nevertheless, scarce research has linked QMPs to information systems in companies' decision making, except for some studies which test e-quality and ISO models (Alonso-Almeida *et al.*, 2014; Yaya *et al.*, 2011, 2013) and some others which study quality policies and market competitiveness in service companies (Yee *et al.*, 2013). Furthermore, within this group, few investigators have analysed this link in the tourism sub-sector, which essentially consists of companies with fewer than 50 employees (Eurostat, 2008).

In the last few years SME have invested in IT/S, and the benefits that can be gained from these systems depend on their usage. The prominent ERP system examples include SAP ERP software and Oracle's E-Business Suite (Chou *et al.*, 2014). Consequently, the adoption and the usage of IT/S continue to be an important consideration for organisations (Shaikh and Karjaluoto, 2015) due to it can be linked to service quality, perceived value, customer satisfaction and post-purchase intention (Kuo *et al.*, 2009). This study provides tangible results in this particular environment, focusing its analysis on travel agencies in Spain.

According to the Iberian Balance Sheet Analysis (SABI, in Spanish) application, this sector has experienced a high business mortality rate in recent years. At the time of

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this study, the number of travel agencies in Spain had decreased from 4,658 in 2010 to only 4,074 in 2011, of which 584 firms (12.53 per cent of the sector) disappeared during a single financial period.

Both the economic crisis and the strengthening of online sales have forced these small enterprises to evolve with their environments or disappear (Casielles *et al.*, 2009). In the space of a few years, companies have changed from using a local business model, based on customers' confidence, to global businesses, in which large amounts of information are available to customers to help them compare and in which price is a key variable in the final purchasing decision.

In addition to the above-mentioned reasons, other factors warrant this study. First, there has been very little research that has included in a single model accounting, non-financial variables and QMPs to analyse financial improvement. There have been a few exceptions, mainly those studies that have focused on lean management, including quality variables, together with many other key factors necessary to maximise value offered to stakeholders (timeliness of delivery, employee performance improvement, efficiency, flexibility, etc.). Despite these factors, it is important to note that the vast majority of "lean studies" have focused on enterprises and manufacturing sectors, which have lean management as their bases and in which "wasted resource" cutbacks (overproduction, stocks, waiting times, defects, under-use of human capital and others) are more tangible. Second, it is necessary to conduct quantitative research into the different sectors in which small enterprises dominate (Lee, 2009) and also to focus on the services sector. Third and finally, mention must be made of the need for studies focused on small enterprises, thus facilitating the decision-making process in the tourism industry, as Kassinis and Soteriou (2003) or Hillary (2004) have suggested.

In the light of the foregoing, it has been deemed relevant to study enterprises that have managed to survive in a sector that has changed so much in recent years. In this respect, this paper seeks to analyse empirically whether investing in quality can make a difference between surviving and disappearing in highly competitive and ever-evolving sectors.

Specifically, it will analyse whether the implementation of QMPs has positive effects on the use and development of advanced information systems in decision making. Moreover, it will examine whether there is a positive link between the use of these systems and the company's finances.

This paper provides evidence relevant to the research conducted in this field in different aspects. First, it highlights the main QMPs adopted by travel agencies and their impacts on these companies' performance using management information in decision making. Second, it makes it easier to understand the effects produced on a small services enterprise by undertaking quality measures. Third, it increases understanding of the impact of QMP implementation on companies' financial performance (FP), which is measured in terms of sales growth or earnings growth, among other indicators. Fourth, because this study focuses on a sector with a high business mortality rate, analysing enterprises that have survived could shed light on whether investing in quality is a good strategy to differentiate and survive in complex and highly competitive sectors. Fifth and finally, this study incorporates a new methodological approach, using a second-tier construct in the model for benchmarking: indeed, it adds accounting information systems to other non-financial information systems.

The remainder of this paper is structured as follows. Section 2 discusses the theoretical arguments for the adoption of QMPs and their effects on the use of both financial and non-financial information in decision making, in addition to their direct or indirect links to companies' FP. Section 3 describes the methodology used in the

empirical study. Section 4 presents the quantitative analysis. This paper ends with Section 5, in which the findings are analysed, and conclusions based on the research are outlined.

2. Review of the literature

2.1 Impact of QMPs on information systems used in the decision-making process

In recent years, research related to QMP implementation in companies has been increasing. Most of this research has suggested that these practices have direct effects on companies' FP (Sadikoglu and Zehir, 2010; Rodriguez-Antón *et al.*, 2011; Rubio-Andrada *et al.*, 2011). However, views differ regarding whether the cost reduction obtained by the implementation of QMPs is offset by expenses related to monitoring compliance with these policies (Nair, 2006). Studies have argued that there is positive interaction between QMP implementation and FP, based on two differentiated factors.

On the one hand, there are effects on internal factors: as QMPs improve and reduce a company's internal processes, they have the impact of more efficient use of available resources (Terlaak and King, 2006; Rubio-Andrada *et al.*, 2011; Rodriguez-Antón *et al.*, 2011; Alonso-Almeida *et al.*, 2012).

On the other hand, there are effects on external factors: QMPs have an impact on a company's competitiveness, which has positive effects on its sales, market share or benefits. In this respect, various studies have linked QMPs to increases in customer satisfaction (Chen and Kao, 2010), improvement in a company's brand image (Yee *et al.*, 2010; Llach *et al.*, 2013) or an improvement of employees' performance (Testa and Sipe, 2006; Sousa and Aspinwall, 2010; Rodriguez-Antón and Alonso-Almeida, 2011).

Whilst QMPs are considered a key variable for companies' survival (Singh *et al.*, 2008), few studies have analysed their effects on services companies. Their implementation has been studied in manufacturers (Duran *et al.*, 2014), banks (Dawson and Patrickson, 1991) and educational organisations (Cruickshank, 2003). Some approaches have also examined restaurants (Perramon *et al.*, 2014) and the tourism industry in general (Arasli, 2002; Tarí *et al.*, 2010; Alonso-Almeida *et al.*, 2012), focusing mainly on hotels, by analysing the effects of quality policies on prices or analysing their links with the rating stars that they have obtained (Becerra *et al.*, 2013; Núñez-Serrano *et al.*, 2014). However, the latter sector has received much greater research attention, examining its efficiency or its shareholder value creation, for instance (Ashrafi *et al.*, 2013; FitzPatrick *et al.*, 2013). In contrast, this study, following some previous literature (see Bagur-Femenías *et al.*, 2013), focuses exclusively on the implementation of QMPs in travel agencies, the characteristics of which are very different from those examined previous studies, both for their size and for their increasing mortality in Spain.

It is therefore apparent that the impact of QMPs on a company's financial variables has been extensively studied. The same cannot be said for the impact of quality on the information systems used in decision-making processes. However, to optimise strategies based on quality, there is a consensus that more detailed and precise accounting information systems, such as advanced management accounting programs (AMAPs), are necessary because the classic information systems are insufficient (Baines and Langfield-Smith, 2003). The weaknesses in the classic accounting information systems are highlighted by their sole focus on internal variables. Globalisation also requires the use of non-financial management accounting information (NFMAI) that can consider and investigate the changing environment in which a company operates and provide useful information for decision making (Chenhall and Langfield-Smith, 1998; Gul, 1991; Baines and Langfield-Smith, 2003; Kennedy and Widener, 2008; Santini, 2013).

In their article entitled "Antecedents to management accounting change: a structural equation approach", published in 2003, Baines and Langfield-Smith positively linked changing and highly competitive environments to (both financial and non-financial) information systems and business success. However, this analysis was conducted in a manufacturing and industrial environment. The study subsequently generated prolific research, and the article has been cited more than 280 times. However, the current paper emphasises the use of more detailed and complex management information (AMAPs and NFMAIs), compared with classic systems (management accounting systems and management accounting information), which have generated extensive literature.

If we focus on services enterprises and in particular on the tourism industry, the high degree of competitiveness of which makes the use of these two constructs (AMAP and NFMAI) suitable, the authors of this paper are unable to find empirical studies linking QMPs to AMAP and NFMAI using the same terms with which they were defined by Baines and Langfield-Smith (2003). There are, nevertheless, many studies in the services sector directly linking quality to the degree of development and the use of accounting information systems (Patiar *et al.*, 2012; Modell, 2009; Weinstein, 2009; Cheng and Choy, 2013, to name recent studies on different services, such as hotels, higher education or maritime transport). In terms of the use of non-financial information in decision making, there is also an extensive literature, in which Kaplan and Norton's balanced scorecard stands out as the key tool for monitoring non-financial variables (Kaplan and Norton, 1996, 2007).

In light of the above scholarship, the following hypothesis is proposed:

H1. The adoption of QMPs has a positive, direct effect on the use of advanced management information systems (AMIS).

2.2 Impact of information systems used in decision making on companies' FP

It has been observed that the implementation of QMPs can be crucial for the future survival of a business (Russo and Fouts, 1997). This factor can be even more influential in a sector with high business mortality, such as the sector in question in this paper, in which being competitive can mean the difference between surviving and disappearing. Competitiveness implies that the enterprise will have to manage not only internal but also external variables. It also implies studying the past (financial information from the accounting system) and planning for the future (non-financial information from indicators). Regarding accounting control, the use of advanced financial information systems is crucial to obtaining good FP (Baines and Langfield-Smith, 2003). However, Kaplan and Norton's research showed that non-financial control variables have become increasingly important over the years. This type of variable can facilitate integrating strategy into an organisation, based on a series of cause-effect indicators. Additionally, according to Lueg and Carvalho e Silva (2013), non-financial indicators are very versatile tools because they can apply to different industries and organisations, adapting each non-financial indicator to the business's needs. Therefore, although financial indicators provide accounting information on past activities, they do not ensure an adequate strategy to make a profit in the future (Nanni *et al.*, 1992; Baines and Langfield-Smith, 2003). As Atkinson *et al.* (1997) argued, any information system must incorporate non-financial information due to its predictive power. In highly competitive sectors such as travel agencies, Mia and Clarke's (1999) research must be considered because they found a link between FP and the use of information systems. Similarly, Davila (2000) showed that the use of non-financial information improves companies' FP with a high

level of customer contact. Other recent studies emphasising the importance of non-financial information systems include Chari *et al.* (2012) and Domanović (2013), which focused on changing environments with high levels of uncertainty.

If we focus on the tourism industry, various studies, mainly focusing on the hotel sector run, have employed similar approaches (Teeratansirikool *et al.*, 2013; Pavlatos and Paggios, 2008; Mia and Patiar, 2001; Hussain *et al.*, 1998).

For these reasons and on the basis of the published literature, the following working hypotheses are proposed:

H2. AMISs can be considered a second-tier construct, formed by financial and non-financial variables.

As a result of *H2*, two sub-hypotheses are introduced to analyse the links between financial and non-financial factors and AMISs:

H2a. The use of advanced financial information systems (AMAP) is directly linked to the use of AMISs.

H2b. The use of advanced non-financial information systems (NFMAI) is directly linked to the use of AMISs.

H3. The use of AMISs has a positive, direct effect on the companies' FP.

To summarise, Figure 1 shows the model for benchmarking.

3. Methodology

3.1 Sample and data collection

This study was conducted by means of a survey, covering more than 5 per cent of the travel agencies in Spain. The surveys were electronically completed by 185 Spanish travel agencies with fewer than 50 employees. All of the replies were received in the first quarter of 2013. The sample was limited to travel agencies because they represent a highly competitive sector with a high mortality rate (Lin *et al.*, 2009). Furthermore, in this regard, we thought it would be interesting to test new business management practices. Moreover, these undertakings are mostly small- or medium-sized enterprises, in keeping with this paper's objectives.

The survey included in its first section the company's descriptive and financial information; three additional parts completed its content (AMAP, NFMI and quality practices).

Table I shows the profiles of companies that completed the questionnaire.

3.2 Measurements

The four constructs forming the structure of the model were determined on the basis of previously published data.

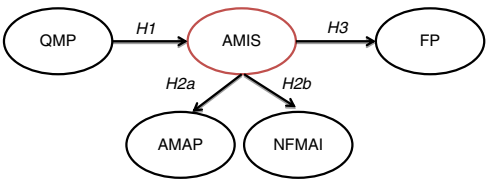

Figure 1.
Model for benchmarking

	No.	%
Classification		
Retailers	129	69.73
Wholesalers	6	3.24
Retailers-wholesalers	50	27.03
Total	185	100.00
Type of company		
Independent	35	18.92
Subsidiary	150	81.08
Total	185	100.00
Years since creation		
< 5 years	84	45.41
> 5 years	101	54.49
Total	185	100.00

Table I. Profile of sampled companies

All of the variables used in each construct can be observed in the Appendix, as well as the bibliographic references justifying their use. They are presented in a schematic manner in the following section:

(1) QMPs: the company's senior management commitment to the quality of the service provided; the company's cooperation with customers and/or providers to increase standards of service; the capacity to identify improvements in the provision of services; the company monitors compliance with the objectives and corrects for any possible deviations; there is a business culture based on continuous improvements.

(2) Use of AMAPs: periodic calculation of product profitability analyses; periodic calculation of customer profitability analyses; use of target costing; analysis of the creation of shareholder value.

(3) NFMI: use of non-financial indicators in the company's management; use of benchmarking analysis; detailed and continuous study to assess market needs and to identify new business opportunities; analysis of employees' satisfaction, training and turnover.

(4) FP: profits have increased in the last two annual periods; market share has increased in the last two years; sales have increased in the last two financial years; the costs of operations have decreased in the last two financial years; supply costs have decreased in the last two financial years; non-quality costs have decreased in the last two annual periods.

In the three first constructs, a seven-point Likert scale was used, with 1 indicating "totally disagree" and 7 indicating "totally agree".

In the last construct, the measurement scale developed by Camisón (1999) was used. This scale was later used by other authors, such as Pereira-Moliner *et al.* (2012) and Bagur-Femenías *et al.* (2013).

4. Findings

The first part of our study consisted of conducting factor analysis to determine the clustered variables in the used constructs. Subsequently, links between the constructs

were tested by means of structural equation modelling. Using robust statistical methods, the main indices were analysed to determine the model's goodness of fit and also to analyse the mediating effects of AMIS on a company's performance.

The actions performed in the two previous phases are detailed below.

4.1 Factor analysis

Variables that are clustered into a construct can be determined by exploratory factor analysis. For the purpose of implementing the analysis, a minimum load of 0.5 was factored (Loiacono *et al.*, 2002). These factor structures were verified by confirmatory factor analysis, thus disregarding the variables that did not exceed the threshold of 0.7 in that analysis. In contrast, the factors that exceeded 0.7 were assessed using Chronbach's α, proving that all of the constructs had an α greater than 0.7 (Carmines and Zeller, 1979).

The next stage was to conduct a consistency analysis of the indicators of reliability, exceeding in all of the cases the minimum value of 0.6 for the composite reliability coefficient (Bagozzi and Yi, 1988). Finally, the convergent validity of the model was assessed according to Fornell and Larcker's (1981) criteria. The findings show that both the average variance extracted and the loading of items were greater than 0.5.

The results can be observed in Table II.

In Table III, the discriminant validity of constructs is confirmed. In all of the cases, it shows how each construct is more closely related to its own dimensions than to the dimensions of other constructs.

4.2 Benchmarking of the model

The established model was benchmarked through the robust method with EQS, version 6.1, which is structural equation modelling software in which the suitability of

Dimension	Code	Exploratory factor analysis	Confirmatory factor analysis	Internal consistency and reliability statistics
Quality management practices (QMP)	QMP1	0.784	0.726	α Cronbach: 0.878
	QMP2	0.749	–	AVE: 0.573
	QMP3	0.831	0.800	Composite reliability: 0.870
	QMP4	0.763	0.703	
	QMP5	0.822	0.784	
	QMP6	0.801	0.768	
Advanced management Accounting practices (AMAP)	AMAP1	0.846	0.810	α Cronbach: 0.814
	AMAP2	0.789	0.700	AVE: 0.558
	AMAP3	0.768	–	Composite reliability: 0.791
	AMAP4	0.804	0.728	
Non-financial manag. Inform. (NFMI)	NFMI1	0.880	0.845	α Cronbach: 0.890
	NFMI2	0.894	0.874	AVE: 0.672
	NFMI3	0.858	0.796	Composite reliability: 0.891
	NFMI4	0.837	0.759	
Financial performance (FP)	FP1	0.835	0.890	α Cronbach: 0.869
	FP2	0.777	–	AVE: 0.699
	FP3	0.901	–	Composite reliability: 0.873
	FP4	0.779	–	
	FP5	0.860	0.887	
	FP6	0.778	0.719	
	FP7	0.648	–	

Table II.
Factor analysis of the dimensions

the model was proved. According to Schermelleh-Engel *et al.* (2003), although it would be sufficient to have three of their recommended values to determine the prosperity of the model, satisfactory results can be observed for all of the indices in Table IV. Thus, the explanatory capacity of the model is validated.

In Figure 2, the tested model is presented as a summary.

The final step is to assess the mediating effects of AMIS between quality and FP. Such mediating effects were measured using the methodology proposed by Baron and Kenny (1986), who proposed three regression series: first, regressing the mediator on the independent variable; second, regressing the dependent variable on the independent variable; and third, regressing the dependent variable on both the independent variable and the mediator. In Table V, the regression results can be observed. The control variables included in the regressions were the following: typology and average age of employees. Typology is a dichotomous variable (0 = Independent firm; 1 = Group/others), and the employees' average age follows the following scale: 0 = younger than

	QMP	AMAP	NFMAI	FP
QMP	*0.757*			
AMAP	0.615	*0.748*		
NFMAI	0.180	0.135	*0.820*	
FP	0.237	0.172	0.303	*0.836*

Table III.
Discriminant validity

Note: Square root of AVE on the diagonal

Index	Result	Ideal value
χ^{2a}	107.2502	Minimum possible
χ^2/df	1.2471	< 3
BB-NFI (Bentler-Bonnet normed fit index)	0.914	> 0.8
BB-NNFI (Bentler-Bonnet non-normed fit index)	0.977	> 0.9
IFI (Bollen's fit index)	0.982	> 0.9
CFI (comparative fit index)	0.981	> 0.9
RMSEA (root mean square error of approximation)	0.039	< 0.06

Table IV.
Main indices (EQS)

Note: [a]Satorra-Bentler scaled χ^2

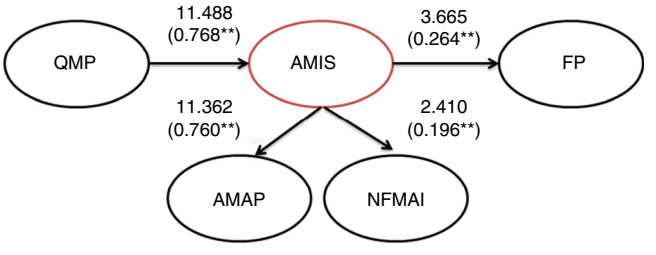

Figure 2.
Standardised solution for the causal model

Note: **p-value significant at the 0.05 level

	QMP-AMAP β	QMP-FP	QMP and AMAP-FP
Control			
TYPE	0.231	0.198	0.203
AGE	−0.104	−0.194	−0.138
Independent			
QMP	0.588**	0.253**	0.236**
AMAP			0.027
R^2	0.381	0.092	0.087
	QMP-NFMAI β	QMP-FP	QMP and NFMAI-FP
Control			
TYPE	−0.058	0.198	0.293
AGE	−0.260	−0.194	0.024
Independent			
QMP	0.225**	0.253**	0.175**
NFMAI			0.235**
R^2	0.064	0.092	0.149

Note: **Significant at the $p < 0.05$ level

Table V. Regressions conducted to assess the mediating effect of AMIS between QMP and FP

30 years old; 1 = between 30 and 45 years old; 2 = between 45 and 60 years old; and 3 = older than 60 years old. As the control variables did not have any effect on the study we did not included them in the model, but we do included them when we tested the mediating effect.

Table V confirms the studied mediating effects in NFMAI: first, the regression shows how the independent variable affects the mediator; second, the second regression confirms that the independent variable does not affect the dependent variable; and finally, the third regression validates that the effects of the mediate factor on the dependent and independent variables are insignificant when the mediate variable enters the model.

5. Results, analysis and conclusions

The conducted analysis validates the model proposed in this paper. Each hypothesis' results and their interpretation are presented below.

The first important point is that the results obtained in the research confirm the positive, direct link between QMP and AMIS. The quality policies enable having more detailed and precise financial and non-financial information systems (e.g. Patiar *et al.*, 2012; Modell, 2009; Weinstein, 2009), especially in changing and highly competitive environments (Baines and Langfield-Smith, 2003; Kennedy and Widener, 2008; Santini, 2013). Concerning travel agencies in Spain, the findings of this paper are in agreement with those of previous studies, and consequently, *H1* is accepted.

In addition, the results show that advanced information systems in travel agencies offer both financial and non-financial indicators. A closer look at the results reveals that quality policies in travel agencies encourage the control of financial variables related to the price of the final product. Our attention is caught by both the absence of advanced techniques in the calculation of costs in the AMAP construct (such as, for instance, the cost systems-based activities, also called ABC) and the presence of other techniques,

although these techniques might not be as common as target costing. This difference might be explained by the new sales channels becoming increasingly common in this sector. Operating in a global marketplace in which the customer has access to a large amount of information to compare, with lower incomes available for consumption due to the economic crisis, could explain why for the final consumer, price is a key variable in the purchasing decision. This result would force travel agencies to adopt management techniques rather than cost calculation methods, by ensuring sales with minimal profit margins (target costing or calculating the profitability of products or services). Regarding financial information, it is worth noting that its importance in AMIS is inferior. As highlighted in Kaplan and Norton's (1996) multiple papers , the use of non-financial information is essential to guaranteeing the long-term survival of companies. In this sense, observing the variables that compound the NFMAI construct reveals that the use of non-financial management indicators remains a current practice and that placing the emphasis on workers as the driving force of enterprises is still a key factor in the development of long-term sustainable businesses, in line with Fullerton *et al.* (2012). Travel agencies must be customer driven (Casielles *et al.*, 2009). To attend to the needs of the consumer, it is essential to adapt to the demand. This adaptation can be accomplished with a complete and efficient information system that monitors not only financial variables (workers' performance, cost controlling, cost-benefit analyses) but also external variables (benchmarking or identification of new business opportunities) as many authors have previously indicated (e.g. Nanni *et al.*, 1992; Atkinson *et al.*, 1997; Kaplan and Norton, 1996, 2007). In this regard, although the results of the study indicate greater importance of financial indicators in advanced information systems, the non-financial indicators are also significant in the development of the construct. Hence, *H2a* and *H2b* are accepted.

One of the initial objectives of this research was to examine the role of advanced information systems as mediators between quality policies and FP. Previously, many authors had already indicated a link between the use of information systems and enhanced business performance (e.g. Kaplan and Norton, 1996, 2007; Davila, 2000; Baines and Langfield-Smith, 2003; Pavlatos and Paggios, 2008; Chari *et al.*, 2012; Domanovic, 2013; Teeratansirikool *et al.*, 2013). The results of this study point in a single direction, given the direct link between the use of advanced information systems and FP. Hence, *H3* is accepted.

The detailed analysis of the mediating effects of advanced information systems between quality policies and travel agencies' FPs implies a double analysis in this paper because the AMIS construct is formative. The use of the formative construct enables one of the primary contributions of this paper: the findings show that quality policies have direct effects on the use of both non-financial information and financial information, although the results are more significant in the latter case. In contrast, if we study the effects of QMP and AMAP on FP and those of QMP and NFMAI on FP, we can observe that the link is only significant in the case of the use of non-financial indicators. Thus, is in NFMAI where the mediating effect lies. These results suggest that quality policies facilitate to a greater extent the use of financial indicators, but the key to achieving better business performance lies in the use of non-financial indicators.

This study has two main implications for managers and practitioners of travel agencies. First, the investment in advanced information systems leads to a better FP. Managers should see the cost of implementing advanced information systems as an opportunity to be more efficient and competitive than other travel agencies. Second, managers should be proactive in adding in their information systems both financial

and non-financial indicators: quality policies in travel agencies encourage the control of financial variables but is in the use of non-financial indicators where we found the mediating factor between quality practices and FP.

This study opens the door to other research, for instance, analyses of whether the results are valid in other tourism sub-sectors, such as bars, restaurants, hotels, etc., or attempts to validate the results for other countries. It might also be of interest to embed other management practices in the model, such as environmental management practices or practices of corporate social responsibility (in this way completing the so-called triple bottom line), and to analyse how they affect information systems and companies' performances.

Finally, this study is subject to several constraints inherent to the methodology used to collect the required data. The first constraint lies in the surveys having been conducted in a particular geographical region; therefore, it might be difficult to extrapolate the results of this study to other countries. Additionally, the sample only focuses on a sub-sector of the tourism sector, such as travel agencies. In this respect, the conclusions might be difficult to apply to other sectors.

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Further reading

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Appendix

Code	Definition
QMP – quality management practices: Saraph, *et al.* (1989); Flynn *et al.* (1994); Conca *et al.* (2004); Naor *et al.* (2008); Molina-Azorín *et al.* (2009); Sadikoglu and Zehir (2010)	
QMP1	Senior management is highly committed to the quality of marketed goods or of the service provided
QMP2	The company works with customers and suppliers to improve quality
QMP3	The improvements in the provision of services are identified
QMP4	Compliance with the objectives is controlled, and possible deviations are corrected
QMP5	There is a culture based on continuous improvement
AMAP – advanced accounting information: Hussain *et al.* (1998); Baines and Langfield-Smith (2003); Fullerton *et al.* (2012)	
AMAP1	Product profitability analyses are periodically calculated
AMAP2	Customer profitability analyses periodically calculated
AMAP3	Target costing is a standard management tool
AMAP4	The creation of shareholder value is analysed
NFMAI – non-financial information systems: Baines and Langfield-Smith (2003); Fullerton *et al.* (2012)	
NFMAI1	Non-financial indicators are used to complement the accounting information
NFMAI2	The market is analysed to seek new business opportunities
NFMAI3	Benchmarking facilitates decision making
NFMAI4	Employees' satisfaction, training and turnover are analysed
FP – financial performance: Das *et al.* (2000); Douglas and Judge (2001); Agus (2005); Kassinis and Soteriou (2003); Molina-Azorin *et al.* (2009); Zeng *et al.* (2010); Rodriguez-Anton *et al.* (2011); Rubio-Andrada *et al.* (2011); Bagur-Femenías *et al.* (2013).	
FP1	Profits have increased in the last two financial years
FP2	Market share has increased in the last two financial years
FP3	Sales have increased in the last two financial years
FP4	Costs of operations have decreased in the last two financial years
FP5	Supply costs have decreased in the last two financial years
FP6	Costs of waste have decreased in the last two financial years

Table AI. Code and definition for the variables studied

Notes: In the three first constructs, a seven-point Likert scale was used, with 1 indicating "totally disagree" and 7 indicating "totally agree". In the last construct, the measurement scale developed by Camisón (1999) was used. This scale was later used by other authors, such as Pereira-Moliner *et al.* (2012) and Bagur-Femenías *et al.* (2013)

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