

Information exchange in big companies of the Spanish hotel sector: an inside and inter-organizational comparative analysis

Alfonso Infante Moro

University of Huelva, Department of Financial Economics, Accounting and Operations Management, GITICE research group, 21071, Huelva (Spain).

alfonso.infante@uhu.es

Francisco José Martínez López

University of Huelva, Department of Financial Economics, Accounting and Operations Management, GITICE research group, 21071, Huelva (Spain).

francis@uhu.es

Mercedes García Ordaz

University of Huelva, Department of Financial Economics, Accounting and Operations Management, GITICE research group, 21071, Huelva (Spain).

ordaz@uhu.es

Juan Carlos Infante Moro

University of Huelva, Department of Financial Economics, Accounting and Operations Management, GITICE research group, 21071, Huelva (Spain).

juancarlos.infante@alu.uhu.es

ABSTRACT

This is the first transversal and comparative study of the hotel sector regarding the transmission of information in its companies.

A transversal analysis of big companies in the hotel sector was made and compared to how information is transmitted in big companies of other Spanish business sectors. This is an empirical research based on two surveys, one of the hotel sector and another of Spanish companies in other business sectors; a total of 410 companies were analyzed.

And the results showed that the hotel sector is similar to other business sectors in Spain in terms of the use of information transmission in its big companies and, thus, in the use of information systems. Although, in the hotel sector, the use of information transmission and information systems require further development due to the dependence of this type of business on specific information.

Keywords

Hotel sector, big companies, comparative analysis, information systems, information and communication technologies (ICT).

1. Introduction

In this paper we determine the transmission of information in big companies of the Spanish hotel sector through a comparison with big companies of the business sector in general in Spain (all companies based in Spain and which operate within a recognized business sector in the country) to find out if this one really gives a competitive advantage for these companies. Thus, we can observe in big companies if this sector is more developed than the average firm in another sector or, whether hotels need to strengthen their information systems in accordance with the importance of data for this sector. Although it doesn't seem that companies are applying it, so they are missing the competitive advantage that can bring.

These information systems should be clearly visible in the hotel sector since it is a business that produces and exchanges large quantities of information on a daily basis (Lam & McKercher, 2013). Therefore, our study focuses on a comparison of the hotel sector with the business sector in general, limiting our research to Spain because it is an economy that stands out in Europe has having a highly prominent hotel sector (Eurostat, 2000-2011) and to the big companies (companies whose turnover exceeds two million euros annually) because they are companies with many employees and their information systems have a critical role in their good operating.

The paper is structured as follows: the next section provides a literature review on importance of tourism in Spain, importance of information in business and importance of information systems in companies. The third section describes our data compilation method and sample size. And to conclude the paper, we present and discuss the results of our analysis.

2. Literature review

2.1. Importance of tourism in Spain

Tourism plays a significant role in international trade as a major source of income for many countries and territories. This sector is growing and exceeded 12.6 million hotel beds in the 27 European Union (EU) countries in 2011. And Spain now ranks second with a 14.6% share, up from fourth in 2000 when it supplied 12.4% of the 10.6 million hotel beds available in the EU (Eurostat, 2000-2011). Spain is, therefore, an important player in this sector both in terms of hotel bed numbers and in its ascendant position in the industry.

Spain is one of the biggest tourist destinations in the world, and tourism accounted for 10.2% of total GDP and 11.8% of total employment nationwide in 2010 (EPA, Labor Force Survey). It is the primary source of job and wealth creation in the Spanish economy.

According to figures for 2011, tourism accounts for 73.6% of overnight hotel stays, with 82.8% of tourists choosing to reside in officially authorized accommodation. Data from the Ministry of Industry, Energy and Tourism's 2011 annual report shows that there were 281.3 million overnight stays in 2012 (179 million generated by foreign tourists, of whom more than 91 million were from Germany and the UK) an increase of 2.3% on the previous year in which Spain was still deeply immersed in its economic crisis (INE 2012), all of which are reasons enough to study this sector.

2.2. Importance of information in business

Information is necessary to better organize and coordinate the functioning of the hotel and foment customer satisfaction, to ensure quality service (Dixit, 2013), key to maintaining and improving tourism numbers.

Information has a critical role in decision-making in business; in other words, data are processed to convey a message that a company interprets in order to make a decision or accept something as fact that may affect a company's very future (Uçaktürk & Villard, 2013; Citroen, 2011). Hence the value of information for companies.

In companies, there are three types of information: information that enters from outside, information that circulates within the company and information that exits the company to an external receiver (Arribas, 2000). And all this information is supported by information systems inside firms: transactional systems, decision support systems and strategic systems (Martínez & Vargas, 2011; Ramos, 2010; Arjonilla & Medina, 2009; Gil-Padilla & Espino-Rodríguez, 2008).

2.3. Importance of information systems in business

Each of information systems has a specific function: transactional systems, are concerned with the input and output of information and generate a large amount of data; decision support systems are used by middle managers and directors, while strategic systems use information technologies to create competitive advantage.

This study focuses on the communication of information within companies. So, when we refer to information entering and exiting the company we mean transactional systems of information (huge gatherers of information for later use and exploitation) or interoperability, systems that allow companies to communicate and exchange information (Loukis & Charalabidis, 2013; Otto, Ebner, Baghi & Bittmann, 2013; Jardim-Goncalves, Popplewell & Grilo, 2012; Kaya & Azaltun, 2012). In these systems, the main sources and destinations of this information are the stakeholders: customers, suppliers, mass media, training, banks, Internet, public entities, external advisors and group companies, while the transmitted information is primarily concerned with accounting, billing, payroll, inventories, bank settlements and accounts receivable and payable.

The exploitation of the information obtained pertains to decision support systems which produce information used by middle managers and directors for decision-making (Lin, Cole & Dalkir, 2014; Pucciani & Murphy, 2011; Raguz, Pavlic & Svilokos, 2011; Ivankovic, 2005; Frishammar, 2003). If such systems are available, it is only normal that decision-makers can make greater use of information. These systems are formed of data on cash flows, simulation models of inventories and business activities, procurement and production scheduling, etc.

And as a means of communicating information within these companies, we find strategic systems, or Information and Communication Technologies (ICT), that propel the innovation and automation of business processes through the use of information technologies to create competitive advantage (Nicolau & Santa-María, 2013; Ip, Leung & Law, 2011; Bilgihan, Okumus, Khaldoon "Khal" Nusair & Kwun, 2011; Tavitiyaman, Qu & Zhang, 2011; Aldebert, Dang & Longhi, 2011).

3. Methodology

3.1. Data acquisition tools

Data was collected through a questionnaire that was completed by a sample of big companies of Spanish hotel sector and by a sample of big companies of the other business sectors in Spain. This questionnaire is formed of 38 items that consist of percentage questions with a base of one hundred, "hierarchical scale" questions (numbers assigned according to preference) and questions related to support and research development (closed Yes or No questions).

3.2. Sample size

The study population is made of companies that can provide this study with telephone, postal and telecommunication data without errors. These establishments belong to the hotel sector and to the others business sectors, and are included in the "España 25.000" database (which consists of 24,187 companies with revenue greater than 2 million euros in 2011; we use this criteria to be considered big companies), published by "Fomento de la producción".

The numbers of companies surveyed was reached by using the Arkin and Colton formula, as reproduced by Sierra (2003). Thus, the sample size for the business sector is 410 and the sample size for the hotel sector is 46; both figures were covered by the survey returns received from the business sector in late 2011 and 2012 (validated by company visits and case studies in 2013).

$$n = \frac{Z^2 \times N \times p \times q}{E^2(N-1) + Z^2 \times p \times q}$$

Where:

n = Sample size

N = Framework size

E = Margin of error

p & q = Population variances

In the Spanish business sector, Z=2; level of confidence=95.5%; E=4.9%, the lowest margin of error; N=24.187 (companies whose turnover exceeds two million euros annually); and, p=0.5 and q=0.5, the highest of all possibilities, which fully guarantees the margins of error and confidence that we have selected. And in the Spanish hotel sector, Z=2; level of confidence=95.5%; E=9%, a slightly higher margin of error due to smaller population size; N=417 (companies whose turnover exceeds two million euros annually); and, p=0.5 and q=0.5.

3.3. The process

The goal is to obtain meaningful statistical data once when the sample size is known. We used the "random sampling without replacement" procedure (by unit and random, without replacement) for a random sampling of finite populations (Cochran, 1977, 18). The data obtained are reliable and were taken from a random number generation of the database consulted, and then adapted to the framework population chosen to make a selection. The sample units were selected from this list.

Once these sampling units were confirmed, the surveys were sent out via e-mail (as an attached file) or by post in 2011, following a correction process to remove possible defects and performance failures had been carried out by "Polls Pilots", which proofread the texts and checked the categorizations (Process validation survey). And when a company did not respond, we re-emailed or posted the questionnaire again, or followed up with phone contact. Otherwise a replacement company was found.

Finally, respondents are encouraged to complete the questionnaire by phone call, email and or direct contact. And the lack of response is countered by resending the survey and if no response is forthcoming, sending it to the next random number listed. Thus, we obtained a response rate of 100%.

4. Discussion of results

To analyze these data we discard the parametric methods because the variables studied are not correspond to be normal distribution; they do not meet the normality requirement (the Kolmogorov-Smirnov test: coefficients of skewedness and kurtosis equal to 0, and asymptotic significance (P-value) less than the significance level [$\alpha=0.05$]). Thus, this study focuses on the U statistical model of the Mann-Whitney test for comparison of means, with a level of significance of $\alpha=0.05$.

The Mann-Whitney U model enables us to observe if there are differences between these two samples for each of the variables, and with the figures for the averages we can determine whether these differences are positive or negative for the hotel sector.

Table 1. In this study, we do not find any significant differences in the use of the percentage of information that comes from outside (although it reaches 6% in big companies of the hotel sector), neither in the order of importance of the source from which it comes. The only significant differences are in the level of importance apportioned to 'Mass Media', because the Spanish hotel sector is highly influenced by this news source as it provides it with information on the economy, current affairs and the weather, areas of particular interest to this sector. Both samples give a similar level of importance to customers and suppliers as main data sources; and we also note the value of any information given by customers as it reveals the main feature of business in Spain, which is customer service.

Table 1. Level of importance companies give to sources of information.

	Spanish business sector	Spanish hotel sector	U of Mann-Whitney	W of Wilcoxon	Z	Asymptotic significance (bilateral)	Difference

	Mean	Standard deviation	Mean	Standard deviation					
% Information that comes from outside	43.91	23.521	49.89	21.794	7165.500	81856.500	-1.711	0.087	
From suppliers	6.68	2.850	6.72	2.888	8610.500	80620.500	-0.137	0.891	
From mass media	3.68	2.712	4.70	2.866	6882.500	78892.500	-2.347	0.019	1.01
From customers	7.29	3.019	7.80	2.933	7700.500	79710.500	-1.330	0.184	
From training	4.10	2.617	4.89	2.652	7318.000	79328.000	-1.791	0.073	
From banks	5.58	2.864	5.67	2.675	8608.000	80618.000	-0.139	0.889	
From the Internet	5.23	2.741	5.96	2.582	7376.000	79386.000	-1.715	0.086	
From public a entities	4.74	2.790	4.89	2.814	8530.500	80540.500	-0.238	0.812	
From external advisors	4.55	2.887	5.35	2.635	7402.000	79412.000	-1.681	0.093	
From group or sector companies	5.18	3.043	5.72	2.888	7842.000	79852.000	-1.118	0.264	
From others	1.53	2.596	1.98	2.894	7666.500	79676.500	-1.430	0.153	

Table 2. There are no significant differences regarding the use of the percentage of information that exits the company and the order of importance of its destination. The exception is in those cases where the destination is the mass media, Internet and group or sector companies, which have a higher level of importance for big companies the hotel sector, but not at the expense of other destinations as they all increase in importance to some extent). This is due to the growing ability of the hotel sector to reach potential customers and the importance of the Internet in their business, both in terms of sales (sales channel) and communication (through online social networks, as advertising and a loyalty tool). Customers and suppliers continue to occupy the top positions in importance for data gathering in all sectors in Spain.

Table 2. Level of importance companies give to the destinations of information.

	Spanish business sector		Spanish hotel sector		U of Mann-Whitney	W of Wilcoxon	Z	Asymptotic significance (bilateral)	Difference
	Mean	Standard deviation	Mean	Standard deviation					
% Information sent outside	41.09	25.057	40.73	22.901	7522.500	76900.500	-0.144	0.886	
To suppliers	5.98	3.116	6.43	3.143	7366.500	75262.500	-0.984	0.325	
To mass media	3.15	2.841	4.32	3.033	6197.500	73358.500	-2.521	0.012	1.17
To customers	7.63	3.117	7.91	2.595	8066.000	76331.000	-0.073	0.942	
To training	2.91	2.438	3.02	2.377	7741.500	74536.500	-0.394	0.694	
To banks	5.64	2.998	5.48	2.732	7770.500	8760.500	-0.467	0.640	
To the Internet	3.70	2.929	4.86	2.539	6056.000	73217.000	-2.709	0.007	1.17
To public a entities	5.34	3.112	5.73	3.106	7510.500	75775.500	-0.816	0.415	
To external advisors	3.78	2.921	4.36	3.156	7178.000	74339.000	-1.185	0.236	
To group or sector companies	4.25	3.230	5.27	3.053	6620.500	74148.500	-1.964	0.050	1.02
To others	1.40	2.521	1.93	2.960	6911.500	73706.500	-1.633	0.102	

Table 3. At this point, we find significant differences in the use of information by managers and employees between the hotel and business sector in Spain. In big companies of the hotel sector, the use of information by managers is 7.40 % higher than in

big companies of the business sector, and the use of information by employees is 6.89 % lower. These data are the result of the rise of the computerization of information and the hierarchical organization within these companies in terms of organizational structure and use of information, where there are big differences in the use of information with regard to companies operating in the business sector (except in the use by middle managers). In short, we cannot say that these differences are caused by new developments in information systems for decision support in collaboration with the information technologies of strategic information systems because we do not find significant differences between companies in either sector in terms of the relationship between 'information technologies' and 'flattest organizational structure'.

Table 3. Use of information in the company depending on hierarchical level.

	Spanish business sector		Spanish hotel sector		U of Mann-Whitney	W of Wilcoxon	Z	Asymptotic significance (bilateral)	Difference
	Mean	Standard deviation	Mean	Standard deviation					
% Information by directors	37.66	18.801	45.06	20.913	7325.000	84353.000	-2.308	0.021	7.40
% Information by middle managers	34.97	13.855	34.40	13.116	9158.000	86186.000	-0.066	0.947	
% Information by employees	27.42	19.172	20.53	14.021	7487.000	8615.000	-2.117	0.034	-6.89
ICT that help companies become flatter organizational structures	0.610	0.488	0.646	0.483	9329.500	90735.500	-0.476	0.634	

Table 4. All this use of information is transmitted within the company without significant differences between the two samples; both prefer the same transmission medium: telematic (email or fax) and computer or information systems. Although the use of the telematic medium is 4.96% lower in the hotel sector, because this sector uses traditional media (written communication, phone calls and meetings) a little more, the difference is not significant.

Table 4. Means of transmission of information within the company.

	Spanish business sector		Spanish hotel sector		U of Mann-Whitney	W of Wilcoxon	Z	Asymptotic significance (bilateral)	Difference
	Mean	Standard deviation	Mean	Standard deviation					
By written communication	12.20	12.405	13.45	13.906	8716.500	83021.500	-0.416	0.677	
Verbally (meetings)	16.24	14.775	18.60	18.066	8589.000	82509.000	-0.551	0.582	
By phone	14.71	11.083	16.66	12.287	8138.500	82058.500	-1.119	0.263	
By email or fax	34.30	20.443	29.34	22.206	7549.000	8677.000	-1.866	0.062	
By computer	20.94	19.268	20.48	22.990	8206.500	9287.500	-0.792	0.428	
By others	1.74	4.766	1.91	4.610	8857.000	83162.000	-0.328	0.743	

Table 5. Information is transmitted outside without significant differences in the choice of means of transmission between big companies of the hotel and business sector. Both sectors use the same means in this external transmission.

Table 5. Means of transmission of company information outside.

	Spanish business sector		Spanish hotel sector		U of Mann-Whitney	W of Wilcoxon	Z	Asymptotic significance (bilateral)	Difference
	Mean	Standard deviation	Mean	Standard deviation					
By written communication	15.44	15.676	16.04	16.110	8829.500	80082.500	-0.275	0.783	
Verbally (meetings)	7.92	7.734	7.13	7.097	8457.500	9633.500	-0.728	0.467	
By phone	16.57	12.956	12.56	9.822	7566.500	8742.500	-1.873	0.061	
By email or fax	37.84	22.420	33.17	24.474	8038.000	9214.000	-1.266	0.206	
By computer	16.21	17.615	18.92	21.590	8726.000	79979.000	-0.407	0.684	
By others	1.53	4.228	1.77	4.999	9029.000	10205.000	-0.036	0.971	

5. Conclusions

This study analyzes the transmission of information in the Spanish hotel industry by comparing big companies (companies whose turnover exceeds two million euros annually) in the Spanish hotel sector to others in the business sector in general (companies based in Spain and operating in a recognized enterprise area in the country, whose turnover exceeds two million euros annually too) and studies the following points: the percentage of information that enters and exits the company, the levels of importance of sources and destinations of this information, the means of transmission of information within the company and externally and the hierarchical use of this information.

When all variables are analyzed, we find very few significant differences in the transmission of information between big companies in the Spanish hotel sector and those in the business sector, despite the fact that hotels have a daily information flow that is difficult to equal in other sectors in terms of quantity. This sector differs little from others in the use of these variables, which indicates that the big companies of other sectors are doing a good job of information transmission or there are errors in big companies of the hotel sector. These points to a more detailed study of information and technologies in business.

We can determine that this minor differentiation is due to two factors: the focus of Spanish companies on customer service (main source and destination of information) and the high level of computerization in businesses today. Yet big hotel companies should develop their information systems further as they belong to the service sector and much of their work activity is necessarily computerized, while big companies of other sectors do not seem to need to be so computerized.

Our study found significant differences between the two sectors, which are:

- The percentages of information that enters and exits the company: there are no significant differences although the use of the percentage of information that comes from outside is 6% higher in big companies of the hotel sector, which points to the importance of information of interest to hotels in this sector.
- The level of importance of 'Mass Media' as an information source: big hotel companies give more importance to this source than the business sector big companies because the Spanish hotel sector is highly dependent on knowledge related to its environment, and the mass media provide essential information on the economy, news events and the weather.
- The level of importance of the 'Mass Media', 'Internet' and 'group or sector companies' as information destinations: these carry greater weight in the hotel sector due to the interest in reaching potential customers and the importance of the Internet in its business activity, both in terms of sales (sales channel) and means of communication (online social networks, as advertising and a loyalty tool).
- The hierarchical use of information by managers and employees: in the hotel sector, directors are increasing their use information while employees use it less. This is a result of the growing computerization of information within these companies and the hierarchy of such companies in terms of organizational structure and use of information. Middle managers have a similar percentage of use of this information.
- The means of transmission of information within the company and externally; there are no significant differences and both sectors prefer the same medium of transmission: telematic (email or fax) and computer or information systems. Although there is less use of telematic forms of communication in big companies of the hotel sector, because these companies make slightly more use of traditional means such as communication by writing, phone calls and meetings, (Po-Ju, Okumus, Hua & Khaldoon (Khal) Nusair, 2011), these differences are insignificant.

In sum, we find a hotel sector that is similar to the business sector in Spain in terms of the use of information transmission in big companies and, thus, in the use of information systems: half their information enters and exits, their most important focal point is customer information (customer service), and they prefer the telematic medium for data transmission (email or fax)

and information technologies or information systems, but they continue to use traditional means (communication by writing, phone calls and meetings). The main difference between big companies of these sectors is on the hierarchical use of information by managers and employees, with greater hierarchical use seen in the hotel sector without reliance on strategic information system technologies.

Overall, based on the results, a lack of development of information systems in large companies in the hospitality sector is observed, indicating that this sector should make greater efforts to develop them as information becomes more important in this area, which would be a significant competitive advantage for the company.

And, on the other hand, we can conclude that the large companies in other business sectors have made great efforts and have a good level of development of information systems. Therefore, these companies reduce the competitive advantage that could lead to this factor with respect to companies in the hotel industry.

References

- Aldebert, B., Dang, R. J. & Longhi, C. (2011). Innovation in the tourism industry: The case of tourism@. *Tourism Management*, 32(5), 1204-1213.
- Arjonilla Domínguez, S. J. & Medina Garrido, J. A. (2009). *La gestión de los sistemas de información en la empresa: teoría y casos prácticos* (tercera edición). Madrid: Pirámide.
- Arribas Urrutia, Amaia (2000). Comunicación en la empresa. La importancia de la información interna en la empresa. *Revista Latina de Comunicación Social*, 27. Retrieved December 15, 2013, from <http://www.ucll.es/publicaciones/latina/aa2000tma/127amaia.html>
- Bilgihan, A., Okumus, F., Khaldoon "Khal" Nusair & Kwun, D. J. (2011). Information technology applications and competitive advantage in hotel companies. *Journal of Hospitality and Tourism Technology*, 2(2), 139-153.
- Citroen, C. L. (2011). The role of information in strategic decision-making. *International Journal of Information Management*, 31(6), 493-501.
- Cochran, W. G. (1977). *Sampling Techniques*. New York. John Wiley & Sons.
- Dixit, S. K. (2013). A study of guest's expectation and perception of hotel service quality: case of Khajuraho, India. *Enlightening Tourism. A Pathmaking Journal*, 3(2), 125-141.
- Eurostat, the statistical office of the European Union, *Bed places in hotels and similar establishments (2000-2011)*. Retrieved December 15, 2013, from http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-DS-08-001/EN/KS-DS-08-001-EN.PDF
- Fomento de la Producción, *España 25.000 (2011)*. Retrieved October 10, 2012, from <http://www.fomentodigital.com/busqueda/empresa/espana25000.jsp>
- Frishammar, J. (2003). Information source use in strategic decision-making. *Management Decision*, 41(4), 318-326.
- Gil-Padilla, A. & Espino-Rodríguez, T. F. (2008). Strategic value and resources and capabilities of the information systems area and their impact on organizational performance in the hotel sector. *Tourism Review of AIAEST - International Association of Scientific Experts in Tourism*, 63(3), 21-47.
- INE, National Institute of Statistics, *Coyuntura Turística Hotelera (EOH/IPH/IRSH) (2012)*. Retrieved April 15, 2013, from <http://www.ine.es/daco/daco42/prechote/cth0012.pdf>
- Ip, C., Leung, R. & Law, R. (2011). Progress and development of information and communication technologies in hospitality. *International Journal of Contemporary Hospitality Management*, 23(4), 533-551.
- Ivankovic, G. (2005). Decision-making information for different levels and hotel performance. *Economic and Business Review for Central and South - Eastern Europe*, 7(2), 137-156.
- Jardim-Goncalves, R., Popplewell, K. & Grilo, A. (2012). Sustainable interoperability: The future of internet based industrial enterprises. *Computers in Industry*, 63(8), 731-738.
- Kaya, E. & Azaltun, M. (2012). Role of information systems in supply chain management and its application on five-star hotels in Istanbul. *Journal of Hospitality and Tourism Technology*, 3(2), 138-146.
- Lam, C. & McKercher, B. (2013). The tourism data gap: The utility of official tourism information for the hospitality and tourism industry. *Tourism Management Perspectives*, 6(0), 82-94.
- Lin, Y., Cole, C. & Dalkir, K. (2014). The relationship between perceived value and information source use during KM strategic decision-making: A study of 17 Chinese business managers. *Information Processing & Management*, 50(1), 156-174.
- Loukis, E. N. & Charalabidis, Y. K. (2013). An empirical investigation of information systems interoperability business value in European firms. *Computers in Industry*, 64(4), 412-420.
- Martínez López, A. M. & Vargas Sánchez, A. (2011). Strategy and innovation. Study of the innovative capacity of the Spanish hotel industry. *Tourism & Management Studies*, 1(0), 124-134.
- Ministry of Industry, Energy and Tourism of Spain, *Informe anual 2011 (2012)*. Retrieved April 15, 2013, from <http://www.minetur.gob.es/es-ES/servicios/Documentacion/DocumInteres/InforAnual2011SGEstudios.pdf>
- Nicolau, J. L. & Santa-María, M. J. (2013). The effect of innovation on hotel market value. *International Journal of Hospitality Management*, 32(0), 71-79.
- Otto, B., Ebner, V., Baghi, E. & Bittmann, R. M. (2013). Toward a business model reference for interoperability services. *Computers in Industry*, 64(8), 887-897.
- Po-Ju, C., Okumus, F., Hua, N. & Khaldoon (Khal) Nusair. (2011). Developing effective communication strategies for the Spanish and Haitian-creole-speaking workforce in hotel companies. *Worldwide Hospitality and Tourism Themes*, 3(4), 335-353.
- Pucciani, K. K. & Murphy, H. C. (2011). An investigation of data management and property management systems in hotels. *Tourism and Hospitality Management*, 17(1), 101-114.
- Ramos, C. (2010). Information systems for tourism management. *Tourism & Management Studies*, 6(0), 107-116.

Infante Moro, A., Martínez López, F. J., García Ordaz, M., & Infante Moro, J. C. (2014). Information exchange in big companies of the Spanish hotel sector: an inside and inter-organizational comparative analysis. *TMS Algarve 2014: Management Studies International Conference* (pp. 209-220). University of the Algarve, School of Management, Hospitality and Tourism.

Raguz, I. V., M.Sc., Pavlic, I., M.Sc. & Svilokos, T., M.Sc. (2011). The role of decision-making models in hospitality industry. *Ekonomika Istrazivanja*, 24(1), 605-617.

Sierra, R. (2003). *Técnicas de Investigación Social. Teoría y ejercicios*. Madrid: Thomson Editores.

Tavitiyaman, P., Qu, H. & Zhang, H. Q. (2011). The impact of industry force factors on resource competitive strategies and hotel performance. *International Journal of Hospitality Management*, 30(3), 648-657.

Uçaktürk, A. and Villard, M. (2013). The effects of management information and ERP systems on strategic knowledge management and decision-making. *Procedia - Social and Behavioral Sciences*, 99(0), 1035-1043.

Infante Moro, A., Martínez López, F. J., García Ordaz, M., & Infante Moro, J. C. (2014). Information exchange in big companies of the Spanish hotel sector: an inside and inter-organizational comparative analysis. *TMS Algarve 2014: Management Studies International Conference* (pp. 209-220). University of the Algarve, School of Management, Hospitality and Tourism.