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The intellectual structure of research in hospitality management: A literature review using bibliometric methods of the journal *International Journal of Hospitality Management*

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ABSTRACT

The purpose of this study is to analyze the existing literature on hospitality management from all the research papers published in *The International Journal of Hospitality Management* (IJHM) between 2008 and 2014. The authors apply bibliometric methods – in particular, author citation and co-citation analyses (ACA) – to identify the main research lines within this scientific field; in other words, its 'intellectual structure'. Social network analysis (SNA) is also used to perform a visualization of this structure. The results of the analysis allow us to define the different research lines or fronts which shape the intellectual structure of research on hospitality management.

1. Introduction

The literature has recently seen a proliferation of works aimed at finding the intellectual structure of scientific fields other than the actual field devoted to the study of science or Scientometrics.[1] These works use some of the bibliometric methods and techniques most frequently utilized in the discipline – authorship analysis, author co-citation analysis (ACA), journal analysis (JCA) and social networks analysis (SNA). The following purposes can be highlighted: the possibility of analyzing and visualizing the aforementioned 'intellectual structure' or 'knowledge base' (White and Griffith, 1981); identifying potential 'research fronts' (de Solla Price, 1965); detecting the existence of scientific schools and/or academic networks (the so-called 'invisible colleges') (Crane, 1972; de Solla Price, 1965) or carrying out studies on production, authorship, citation and/or co-citation with regard to a specific discipline, thematic field or scientific sub-discipline.[2]

The aim of the present paper is to identify the 'intellectual structure' or 'knowledge base' of the hospitality management (HM) scientific domain from all the research papers published in *The International Journal of Hospitality Management* (IJHM) – amongst the journals included on SSCI, *Annals of Tourism Research* (ATR), *Tourism Management* (TM), *Journal of Sustainable Tourism* (JST), and *The International Journal of Hospitality Management* (IJHM) are arguably the most influential journals publishing hospitality-management-related papers – during the period between 2008 and 2014. To this end we apply author citation and co-citation analyses (ACA), social networks analysis (SNA) and different multivariate analysis techniques, chiefly cluster analysis.

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[1] This group includes works applied to the widest variety of scientific knowledge fields or domains: economy, psychology, sociology, management, communication, marketing, medicine, geography, etc. In the specific case of management, these methods have been implemented, to quote but a few fields, in strategic management (Acedo et al., 2006; Di Stefano et al., 2010; Nerur et al., 2008; Peteraf et al., 2013; Ramos-Rodríguez and Ruíz-Navarro, 2004; Ronda-Pupo and Guerras-Martín, 2012), entrepreneurship (Gartner et al., 2006; Landström et al., 2012; Schildt et al., 2006), international business (Acedo and Casillas, 2005; Kraus, 2011), innovation (Fagerberg and Vespargen, 2009; Fagerberg et al., 2012), business ethics (Calabretta et al., 2011; Ma, 2009; Uysal, 2010), family business (Benavides-Velasco et al., 2013; Casillas and Acedo, 2007), strategic alliances (Di Guardo and Harrigan, 2012) supply chain management (Charvet et al., 2008), hospitality management (Köseoglu et al., 2015), corporate governance (Durisin and Puzone, 2009), and operation management (Pilkington and Meredith, 2009).

[2] It is generally estimated that, of all the bibliographic references appearing in a scientific paper, approximately 50% are non-systematically distributed across the whole literature mentioned above; another 50% is concentrated in a very small number of works: according to de Solla Price (1965), this percentage of references constitutes the "research front" of this discipline, and their authors form part of what has come to be known as 'invisible colleges'.

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Generally, as a discipline progresses and reaches a higher degree of maturity, an interest in knowing the 'state of the art' of the literature tends to grow amongst its researchers (Portugal-Ferreira, 2011, p. 357) and they analyze large numbers of papers to identify which of them have had the greatest impact.

The literature includes a large number of studies devoted to identifying and analyzing the main strands of research within a particular scientific field. However, most of the studies mentioned above, characterized by their essentially qualitative nature, are usually written by researchers specialized in the same field and are based on their own accumulated knowledge of the development of the discipline. Consequently, there is a possibility of a high degree of subjectivity – as far as method is concerned, qualitative reviews tend to reflect the idiosyncrasies of reviewers, who are deeply involved in the topic (Vogel and Güttel, 2013) – and of a lack of scientific rigor in the interpretations (Tranfield et al., 2003).

Although our paper focuses on this same line of research (i.e., identifying the existence of different strands of research within a specific discipline), unlike most of the studies described so far it adopts a quantitative method to achieve its aims (Eom, 2008; White and McCain, 1998), thus introducing an objectivity measure into the scientific literature evaluation process, namely (Garfield, 1979): author co-citation analysis (ACA).

The main advantage of co-citation analysis lies in the fact that it has a 'non-intrusive' nature, using the literature generated in a scientific field to identify and visualize knowledge structures. One of the most important applications of co-citation analysis is to reveal and represent different aspects of the intellectual structure and composition of scientific fields through maps and identify the specialty areas, research fronts and links between scientific disciplines and specialties over time as well as the changes in their intellectual structures (Miguel et al., 2007). Another of the advantages of this method stems from the fact that the results obtained reflect a joint view expressed by hundreds of thousands of citing authors, and not the personal opinions that each author may have.

For White and McCain (1997), this type of study provides the elements needed to thoroughly visualize the scientific literature on a specific thematic field, thus revealing its intellectual structure.

Joint citation or co-citation analysis, introduced by Small (1973), starts from the assumption that between two or more documents which are co-cited, that is, cited jointly in a third work, there will be – at least from the perspective of the citing author (McCain, 1990, p. 443) – a certain thematic similarity as well as a certain intellectual connection within the field analyzed. The higher the co-citation frequency, the greater the affinity between them (Cawkell, 1976; Garfield et al., 1978; Marshakova, 1973; Small, 1973), and it is possible to regard them as belonging to the same 'research front' (Culnan, 1986; de Solla Price, 1965). The intensity of this relationship will be determined by the number of citing documents which contain the same pair of documents amongst their references. If it is assumed that highly cited documents represent the key concepts, methods or experiments developed in a scientific field, such co-citation patterns can be used to identify and visualize the links between such key ideas (Small, 1973). White and Griffith (1981) proposed author co-citation analysis (ACA) as a new technique that could help find the intellectual structure of scientific disciplines, understanding as 'author' the set of works written by a single person. Co-citation occurs when an author cites a pair of documents of any other two authors. This assumption indisputably has its weaknesses but, with an appropriate selection and a sufficiently large sample, the method can provide useful insights into the field's view of itself.

Fig. 1 shows the different stages of the analysis method from a general perspective, rather than being exclusively focused on author co-citation analysis (ACA).

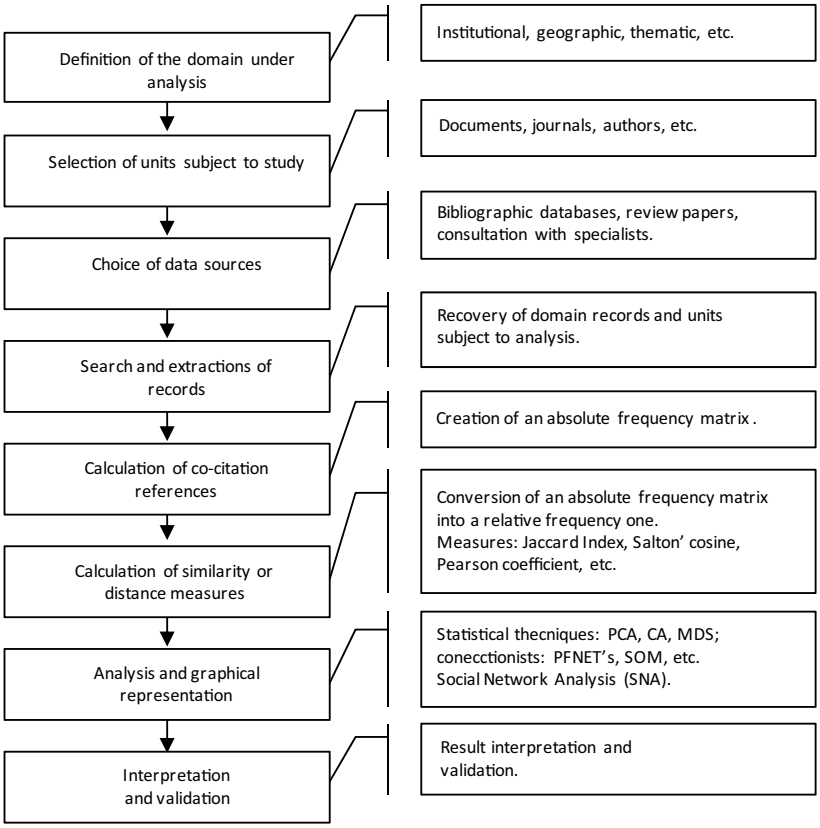

Fig. 1. Co-citation or joint citation analysis: phases or stages in the development of this method.

Source: Miguel et al. (2007, p. 147).

Co-citation analysis begins with the determination of the scientific discipline to be analyzed, the selection of units to be studied (documents, authors, journals, words, etc.), the choice of suitable data sources and the search and retrieval of the records that will eventually shape the set of data to be studied. After the data have been retrieved, it is necessary to proceed with the identification of the set of documents (articles/papers, books, chapters in books, doctoral theses, etc.) which are going to serve as the criterion for the identification of the different research fronts or the analysis of the intellectual structures of the discipline. The criterion most commonly utilized is the number of citations received (Bergh et al., 2006; Ramos-Rodríguez and Ruíz-Navarro, 2004; Tahai and Meyer, 1999); in other words, the most significant and representative works of the field are identified as those with the most citations during the period analyzed – according to the general assumptions of bibliometrics, citation counts reflect the resonance of a paper in the scholarly community (Verbeek et al., 2002). The process continues with the count of absolute co-citation frequencies, the achievement of a co-citation matrix and the calculation of relative frequencies for the purpose of determining the similarities or distances between the units analyzed. Different measures can be used for this, including the Jaccard index, Salton's cosine formula or Pearson' *r* correlation coefficient. The next step is the analysis, for which a range of multivariate analysis techniques are applied: PCA, CA, MDS; connectionists: PFNET's, SOM; or those utilized in social networks analysis (SNA). The use of these analysis techniques has favored the development of new software programs, such as UCINET®, Pajek® or VOSviewer®, which are able to represent large amounts of data, thus making it easier to visualize and represent these networks, so that the representation and interpretation of the results obtained can be carried out.

The development of each of the analysis stages will be discussed in more detail in Section 2.

The paper is structured as follows. The next section deals with the collection of the data to be analyzed from the source or database considered most appropriate and the methodology utilized. The outcome of author citation and co-citation analyses (ACA) as well as a visualization of the 'intellectual structure' of the discipline under examination are shown next. Finally, the last section summarizes the main conclusions, limitations and future research lines derived from the study.

2. Methodology

The primary data source for the documents utilized in the present study was the one developed by the *Institute for Scientific Information* (ISI) of Philadelphia: the Social Sciences Citation Index® (SSCI), available online through the Web of Science (WoS).

At present, this citation database covers some 2474 of the world's leading journals of social sciences across more than 50 disciplines. It is available online through the Web of Science (WoS) service for a fee. WoS provides information to identify the papers most frequently cited and by which publisher and author (allowing access to the references cited in every paper).

A total of 847 research papers published in *The International Journal of Hospitality Management* (IJHM) between 2008 and 2014 were retrieved. These papers contained a total of 47,952 cited references, with a mean of 56.61 references per paper. It must be pointed out that, for merely methodological reasons, it was not possible for us to carry out the analysis from Vol. 1, Issue 1 (1982) of the journal, since it did not appear on the SSCI until 2008.

It is likewise worth highlighting that only 'journal papers' were taken into consideration; that is, research papers – instead of books, doctoral dissertations or reviews and proceedings papers – as only these can be seen as 'certificated knowledge,' an expression used to describe knowledge subject to peer review (Callon et al., 1993). The utilization of citations from research papers also constitutes – as stressed by authors such as Fernández-Alles and Ramos-Rodríguez (2009, p. 163) – a standard practice adopted in the implementation of this type of study which helps increase the reliability of the results obtained.

The documents retrieved were directly downloaded in plain text format (.txt) to be treated, after their conversion, through Bibexcel®, a public domain software program downloadable from the Internet for free and developed specifically by Professor Olle Persson in the *Institute of Information Sciences* of the Swedish University of Umeå for the manipulation and treatment of bibliographic records.

Amongst many other things, Bibexcel® makes it possible to combine the information extracted from different fields of a bibliographic record, including the field of cited references, to carry out frequency counts, to analyze co-occurrence between various elements (authors, documents, journals, etc.) as well as the application of bibliographic coupling techniques.

In our specific case, the software was utilized to carry out not only the frequency counts for the citations contained in the documents analyzed but also – after pre-processing the data and establishing the cutoff point or citation threshold – to generate the author co-citation matrix. The matrices generated with the Bibexcel® program for their treatment with Pajek®, followed by their reticular visualization by means of VOSviewer®, were utilized to find the intellectual structure of the discipline analyzed (HRM) from the vision supplied by social networks analysis (SNA). The different multivariate analyses performed were developed using the statistical package SPSS® v.22.

The analysis of scientific maps cannot be directly applied to the gross data collected from bibliographic databases; instead, it requires a previous pre-processing of the data, which usually contain a large number of errors and inconsistencies mainly related to their coding. For instance, there are sometimes elements which represent the same object or concept. Such is the case of the name of an author or the title of a journal, which can appear written or coded in a wide variety of ways (e.g. Hochschild, Arlie R. or Hochschild R., Acad Manage J or Acad Management J) or the different editions of a single book. For this reason, the data were subject to a careful normalization process so that their accuracy could be guaranteed.

When choosing the documents to be included in the analysis we were faced with the impossibility of working with all the data and the fact that this type of analysis requires establishing a cutoff point for the selection of the most influential papers[3] (McCain, 1990). Accordingly, we consider all the documents which are cited at least 17 times; or those with a citation level above 2% of the citing sample. This gives us a co-citation matrix **C** with a 65×65 size which shows the number of times – raw co-citation counts – that the document pairs, are jointly cited by all works included in the sample; in short, the absolute co-citation frequency for each pair of documents. This co-citation matrix presents two outstanding characteristics: firstly, it is a symmetrical matrix; and, secondly, all the values on the main diagonal are zero because the same document cannot be cited twice in the same paper.

Once the co-citation matrix has been obtained and after establishing the treatment that will be given to the values on the matrix main diagonal so that they can reflect the maximum possible

[3] On the whole, what the literature actually suggests is that no methodological guide or way of acting has been established in this sense, which is why the choice tends to result from a number of tests so that a co-citation matrix can be obtained with a size suited to its statistical treatment or its graphic representation. The same line of reasoning is expressed in relation to the outsourcing field by authors such as Schildt et al. (2006, p. 401).

similarity of each 'paper' considered to itself,[4] the next step in this type of analysis is to obtain a proximity matrix on which to apply various multivariate analysis techniques to reduce the dimensionality of the data analyzed. To this end we can use the statistical packages SPSS© or STATA©. In this respect, despite the criticism received (Ahlgren et al., 2003, 2004; van Eck and Waltman, 2008), Pearson's *r* correlation coefficient continues to be one of the measures for similarity between pairs most often used amongst a wide variety of normalization strategies proposed in the area of bibliometrics (see, van Eck and Waltman, 2009).

The use of *r*-Pearson as a measure of similarity rather than the raw co-citation frequency offers at least two advantages: (1) for any given pair of documents, Pearson's correlation coefficient serves as a measure, not of the frequency with which the two were cited (raw citation frequency) but of the degree of similarity between their co-citation profiles and those in the rest of the works considered. Two works that are always co-cited along with a third, but rarely with any others, will have a strong positive correlation and can be said to be considered by the citing population to have some relationship or similarity to one another; and (2) the correlation coefficient also overcomes differences of scale between a document that is very frequently cited and other very similar but less frequently cited documents, because this would limit their possibility of being co-cited (Kerlinger, 1973; White and McCain, 1998).

Due to our interest in applying the hierarchical cluster analysis as the main multivariate analysis technique and to the fact that this has proved particularly effective when an analysis like this is developed (Greene et al., 2008; Schäffer et al., 2011), a decision was made to not use Pearson's *r* correlation coefficient. A relative co-citation value or frequency was chosen instead: the CoCit-Score proposed by Gmür (2003), which is used as a similarity measure to find a similarity-between-pairs matrix **S,** such that the similarity between a pair of papers (P_i, P_j) is given by normalizing their co-citation frequency with respect to the minimum and mean of the pair's respective citation counts:

$$S_{ij} = \frac{C_{ij}^2}{\min(C_{ii}, C_{jj}) \times \text{mean}(C_{ii}, C_{jj})}$$

The S_{ij} values are in the range [0, 1], with a larger value indicating a stronger association between a pair of papers.

Note that C_{ii} on the main diagonal corresponds to the total number of citations for paper P_i.

In the previously calculated similarity matrix **S** – now suited to the application of multivariate analysis – two sparsely cited authors (both cited 40 times) with an equal absolute co-citation count (20 co-citations) compared to two heavily cited authors (both cited 100 times) with similar absolute values will receive a higher CoCit-Score (0.25 vs. 0.04) since it can be assumed that they are more closely related to one another in content.

The following section shows the results obtained from the author citation and co-citation analyses (ACA), as well as a visualization of the intellectual structure of the scientific discipline under examination, using VOSviewer®. For the specific case of author co-citation analysis, the results are obtained by applying a hierarchical conglomerates analysis of an agglomerative nature to the previous matrix **S** for which Ward's method was used as a clustering/agglomeration method – as recommended by authors such as McCain (1990), Griffiths et al. (1984) or Zitt and Bassecoulard (1996).

The hierarchical methods mentioned allow us to construct a classification tree, known as a 'dendrogram'. This is used to graphically analyze the joining procedure, show which groups gradually join the cluster and on which specific level they do so, as well as the degree of association between groups when they come together.

3. Results and discussion

The results obtained after completing the different stages included in the analysis developed are shown below.

Table 1 provides a list resulting from the citation analysis of the documents most often cited by research papers published in *The International Journal of Hospitality Management* (IJHM) during the period analyzed.

The descriptive study of the aforementioned documents shows or supplies the following research outcomes:

The book by Hair et al. (1998) in its different editions and the paper by Fornell and Larcker (1981) would top the ranking of most cited works with a total of 173 and 134 citations received, respectively.

The works of Anderson and Gerbing (1988), Nunnally (1978), Baron and Kenny (1986), Oliver (1997), Zeithaml et al. (1996), Podsakoff et al. (2003), Parasuraman et al. (1988), and Bagozzi and Youjae (1988), all of them research papers except for the work of Oliver (1997), would complete the top ten.

As for the total of documents, the list includes 49 research papers and 16 books. Table 2 shows the periodical publications or journals where the aforementioned papers have been published.

On the whole, what our observation tells us is that a large proportion of these papers would have been published in marketing journals, all of them with a high impact factor. In particular, three of them: *Journal of Marketing* (22.45%), *Journal of Marketing Research* (10.20%) and *Journal of Retailing* (6.12%) take up nearly 40% of all the papers published, a percentage which rises up to 50% if those other papers published in *Journal of Consumer Research* and *Journal of the Academy of Marketing Research* are considered as well.

The remaining works would have been published either in journals which are more specific with regard to the scientific discipline analyzed, such as the *International Journal of Hospitality Management* itself, *Cornell Hotel and Restaurant Administration Quarterly* and *Journal of Hospitality & Tourism Research*, or related to the area of psychology, amongst them *Psychological Bulletin* or *Journal of Personality and Social Psychology*.

As for the results obtained with the hierarchical conglomerates analysis, the application of that multivariate analysis technique to the matrix **S** resulting from the author co-citation analysis (ACA) developed would have allowed us to check the existence of up to 8 different groups or clusters (see, Table 3), some of which are closely linked to one another.

The first of these clusters or Cluster 1 brings together or gathers 2 research papers and 1 book. They are the works of Kang et al. (2010) and Lee and Park (2009) about the impact that corporate social responsibility (CSR) and the development by firms of a socially responsible behavior may have on business performance and the achievement of financial aims by hotels and casinos. The pioneering work of Freeman (1984), in which the authors lay the foundations of a true Stakeholder Theory, is also included within this first conglomerate or cluster.

The second of these conglomerates or Cluster 2 would be shaped by the works of Smith et al. (1999), Tax et al. (1998) and Bitner et al. (1990). All these research papers are related to the

[4] In particular, there are two main ways to deal with such values. The first one of them (White and Griffith, 1981) consists in taking the sum of the three highest absolute values or frequencies in the corresponding row or column – remember that this is a symmetrical matrix – and dividing that sum by two, which provides a value that, in the opinion of the aforementioned authors, could be indicative of the importance that a given work has in the field under study; the other option (McCain, 1990) simply starts from seeing those values as data missing and applying the criterion of omitting both cases (*pairwise deletion*) when carrying out the calculations to be developed; in other words, of ignoring the main diagonal values when, for example, the correlation coefficients between each pair of documents are calculated.

Table 1
List of the documents most often cited by the research papers about Hospitality Management.

Ranking	Most-cited documents	Number of citations	Ranking	Most-cited documents	Number of citations
1	Hair et al. (1998)	173	34	Hartline and Ferrell (1996)	24
2	Fornell and Larcker (1981)	134	35	Heskett et al. (1994)	24
3	Anderson and Gerbing (1988)	121	36	Aiken and West (1991)	22
4	Nunnally (1978)	114	37	Blau (1964)	22
5	Baron and Kenny (1986)	66	38	Kang et al. (2010)	22
6	Oliver (1997)	62	39	Namkung and Jang (2007)	22
7	Zeithaml et al. (1996)	60	40	Cohen and Cohen (1983)	21
8	Podsakoff et al. (2003)	54	41	Ladhari et al. (2008)	21
9	Parasuraman et al. (1988)	53	42	Hochschild (1983)	21
10	Bagozzi and Youjae (1988)	52	43	Westbrook and Oliver (1991)	21
11	Zeithaml (1988)	44	44	Barney (1991)	20
12	Bitner (1992)	42	45	Bentler and Bonett (1980)	20
13	Hofstede (1980)	39	46	Liu and Jang (2009)	20
14	Parasuraman et al. (1985)	37	47	Dick and Basu (1994)	19
15	Byrne (2001)	36	48	Chung and Pruitt (1994)	19
16	Bitner et al. (1990)	35	49	Jang and Namkung (2009)	19
17	Oliver (1980)	35	50	Stevens et al. (1995)	19
18	Kline (2005)	34	51	Sulek and Hensley (2004)	19
19	Tabachnick and Fidell (2001)	31	52	Ajzen and Fishbein (1980)	18
20	Ajzen (1991)	30	53	Hu and Bentler (1999)	18
21	Churchill (1979)	30	54	Kim (2008)	18
22	Cronin and Taylor (1992)	30	55	Kim et al. (2009)	18
23	Cronin et al. (2000)	29	56	Manaktola and Jauhari (2007)	18
24	Morgan and Hunt (1994)	29	57	Tax et al. (1998)	18
25	Oliver (1999)	27	58	Anderson et al. (1994)	17
26	Fishbein and Ajzen (1975)	26	59	Bohdanowicz (2005)	17
27	Mehrabian and Russell (1974)	26	60	Crosby et al. (1990)	17
28	Smith et al. (1999)	26	61	Freeman (1984)	17
29	Bitner (1990)	25	62	Grönroos (1984)	17
30	Jensen and Meckling (1976)	25	63	Lee and Park (2009)	17
31	Ryu and Jang (2007)	25	64	Maxham and Netemeyer (2002)	17
32	Armstrong and Overton (1977)	24	65	Oliver (1993)	17
33	Bollen (1989)	24			

service encounter, its possible failure and its subsequent recovery. In their work, Smith et al. (1999) develop, for instance, a consumer satisfaction model considering service failure and its subsequent recovery – a solution for the problem caused to the consumer. The authors analyze the consumer satisfaction model through the collection of information about customers of two services: hotels and restaurants. One of their main conclusions is that, in service failure encounters and in their subsequent recovery, a consumer's satisfaction correlates positively with their perceptions of distributive justice, of procedure, and interactive justice. These authors additionally recognize that consumers react intensely to service failures. Therefore, it becomes crucial for a firm to develop service recovery strategies with an equally intense and effective effort to improve consumer satisfaction.

As for Cluster 3, the source-works included in this conglomerate deal with what is known in the service context as 'emotional labor'. In particular, it contains 1 book and 1 research paper: the works of Hochschild (1983) and Kim (2008). Service delivery tasks characteristically require direct contact with the customer, patient or user, during most of the working hours. That is why the employees who work with people must control their emotions during their labor interactions. This emotional control, known as emotional labor, is not a natural reaction of the employee; instead, it is just another part of the task demanded by the job, and it can consequently cause problems on a psychological as well as on a mental level. Amongst the negative impacts of emotional labor stands out its association with the so-called "burnout syndrome," in two of its typical manifestations: emotional exhaustion and the depersonalization which imply distant attitudes toward the addressees of (the individuals who receive) the work.

Amongst all these conglomerates, Cluster 4 is the one which brings together by far the largest number of works; 31 documents in all: 10 books and 21 papers. From a shorter distance it is possible to distinguish the existence of up to 3 different sub-groups.

The first of the sub-groups identifies gathers the source-works of Morgan and Hunt (1994) and Crosby et al. (1990), both of them belonging to one of most recent research streams in the context of marketing: 'relational marketing.'

Table 2
List of journals where the research papers listed in Table1 have been published.

Title of journal	Frequency	Percentage	Total percentage
Journal of Marketing	11	22.45%	22.45%
International Journal of Hospitality Management	8	16.33%	38.78%
Journal of Marketing Research	5	10.20%	48.98%
Cornell Hotel and Restaurant Administration Quarterly	3	6.12%	55.10%
Journal of Retailing	3	6.12%	61.22%
Journal of Consumer Research	2	4.08%	65.30%
Journal of Hospitality & Tourism Research	2	4.08%	69.38%
Journal of the Academy of Marketing Science	2	4.08%	73.46%
Psychological Bulletin	2	4.08%	77.55%
Others	11	22.45%	100%
TOTAL	49	100%	

Table 3
Main themes identified in the cluster analysis.

	Themes
Cluster 1	CSR and performance
Cluster 2	Service encounter
Cluster 3	Emotional labor
Cluster 4	Relational marketing Environmental management, factors that affect consumer behavior Theory of Reasoned Action, work of an instrumental nature, SEM methodology
Cluster 5	Physical environment in which the service is provided (servicescape), perceived quality of service, environmental psychology Impact of certain attributes on client satisfaction and increased loyalty DINESERV scale
Cluster 6	Work of an instrumental nature on the application of quantitative research techniques
Cluster 7	Studies on perceived value as antecedent to behavior intentions Client satisfaction (predominance of cognitive aspect)
Cluster 8	Research which relates emotions with consumer satisfaction Service quality in the field of marketing of services

As for the second sub-group, it contains very disparate works, including, amongst others, the papers by Barney (1991), Chung and Pruitt (1994), Jensen and Meckling (1976) and their Agency Theory or Tabachnick and Fidell (2001). Other works included in this sub-group, as is the case of the works by Manaktola and Jauhari (2007) and Bohdanowicz (2005), deal with issues related to environmental management in the hospitality industry. With regard to source-works, this second sub-set is completed by the works of Bitner (1990), Maxham and Netemeyer (2002), Hartline and Ferrell (1996), Blau (1964), Hofstede (1980), Churchill (1979), Armstrong and Overton (1977), Heskett et al. (1994), Anderson et al. (1994), and Ryu and Jang (2007). For instance, Ryu and Jang (2007) present empirical data showing that music and employees are the most influential factors for consumers' approach behavior in an upscale restaurant.

In turn, the last sub-group identified brings together 3 different sub-sets. The papers by Fishbein and Ajzen (1975), Ajzen and Fishbein (1980) and Ajzen (1991) shape the first of those sub-sets. The so-called Theory of Reasoned Action is proposed in order to explain consumers' behavior. The works – all of them instrumental – of Aiken and West (1991), Cohen and Cohen (1983), Baron and Kenny (1986), Podsakoff et al. (2003), and Bentler and Bonett (1980) form a second sub-set. Finally, the last sub-set identified gathers the works of Bollen (1989), Hu and Bentler (1999), Bagozzi and Youjae (1988), Byrne (2001), and Kline (2005), associated with the application of the SEM methodology.

With regard to Cluster 5, one can also identify two different sub-groups closely related to one another as well.

The works of Bitner (1992) about the physical environment where the service is delivered – servicescape – and the way in which the said environment affects human beings in their status as customers or employees of a firm, along with the paper by Ladhari et al. (2008) who categorized 29 items into five dimensions (tangibles, reliability, responsiveness, assurance, and empathy) to represent the perceived service quality for restaurants, and the one written by Mehrabian and Russell (1974) about environmental psychology would shape the first of the sub-groups mentioned above.

As for the second sub-group, it firstly contains the set of works formed by the works of Namkung and Jang (2007), Sulek and Hensley (2004), and Jang and Namkung (2009) about the impact of food quality and other attributes on the satisfaction of customers and their greater loyalty in restaurants. The second set of works brings together the papers by Liu and Jang (2009), Stevens et al. (1995), and Kim et al. (2009). For instance, Stevens et al. (1995) develop in their paper an instrument to measure service quality in restaurants: DINESERV.

In the case of Cluster 6, this conglomerate gathers – in their different editions for the case of books – the works of Hair et al. (1998), Fornell and Larcker (1981), Anderson and Gerbing (1988), and Nunnally (1978). The source-works included in this conglomerate, all of them of an instrumental nature, are situated amongst the most cited works by the literature in the research developed here. In particular, this circumstance is due to the fact that a large proportion of the research papers examined here has an empirical nature and utilizes multivariate analysis techniques.

Cluster 7 contains the following group of research works: Zeithaml (1988), Cronin et al. (2000), Zeithaml et al. (1996), Oliver (1997), Oliver (1999), Oliver (1980), and Dick and Basu (1994). Nevertheless, it is possible to distinguish two sub-groups within this cluster.

The first of the sub-groups identified is shaped by the works of Zeithaml (1988), Cronin et al. (2000) and Zeithaml et al. (1996). These research papers focus their attention in the perceived value understood as one of the main antecedents of customer satisfaction and loyalty. One the first definitions for perceived value which has played an essential prominent role in subsequent research studies was the one by Zeithaml (1988), who suggests the customer's overall assessment about the usefulness of a product or service based on the perceptions of what he or she receives and what they deliver in return. As for Cronin et al. (2000), these authors point out that the perceived value is regarded as the antecedent with the most weight on behavior intentions – a direct, positive link being established between both variables. Finally, Zeithaml et al. (1996) develop a scale to measure customer loyalty.

The second sub-group brings together the works of Oliver (1997), Oliver (1999), Oliver (1980), and Dick and Basu (1994), all of which deal with customer satisfaction. The concept of satisfaction is analyzed from two distinct perspectives in the literature about marketing: a cognitive side which understands this term as an evaluative judgment resulting from the comparison between consumer expectations and the perception about the value of the product/service received; and another emotional perspective which sees satisfaction as an emotional state derived from the experience with consumption.

Finally, the last of these conglomerates or Cluster 8 would also consist of two different sub-groups.

The first of the aforementioned sub-group brings together the works of Westbrook and Oliver (1991), and Oliver (1993). These are works which appeared from the 1990s – the cognitive aspect prevailed in studies about satisfaction during the 1980s – which begin to relate emotions to consumer satisfaction. These 'affective states' refer to positive and negative feelings both during the use and after the purchase of a certain product or service. In principle, hedonic neutrality is the line which divides emotional states into positive and negative valences. The existence of an increase or reduction of the satisfaction level stems from this neutrality state. For example, when the consumer is unsatisfied, a deficit in the satisfaction level appears that involves negative emotions, which in turn results in a tendency toward lower satisfaction levels or even dissatisfaction. Expressed differently, satisfaction intensity is closely linked to an increase or reduction in the intensity of positive or negative emotions.

The second sub-group would include the following works related to the stream of research on service quality developed within the context of service marketing: Parasuraman et al. (1988), Cronin and Taylor (1992), Parasuraman et al. (1985) and Grönroos (1984). In their respective papers, Parasuraman et al. (1985) and Grönroos (1984) develop their own conceptual model for service quality. This last author, for example, creates a service quality model where consumers assess quality through a comparison

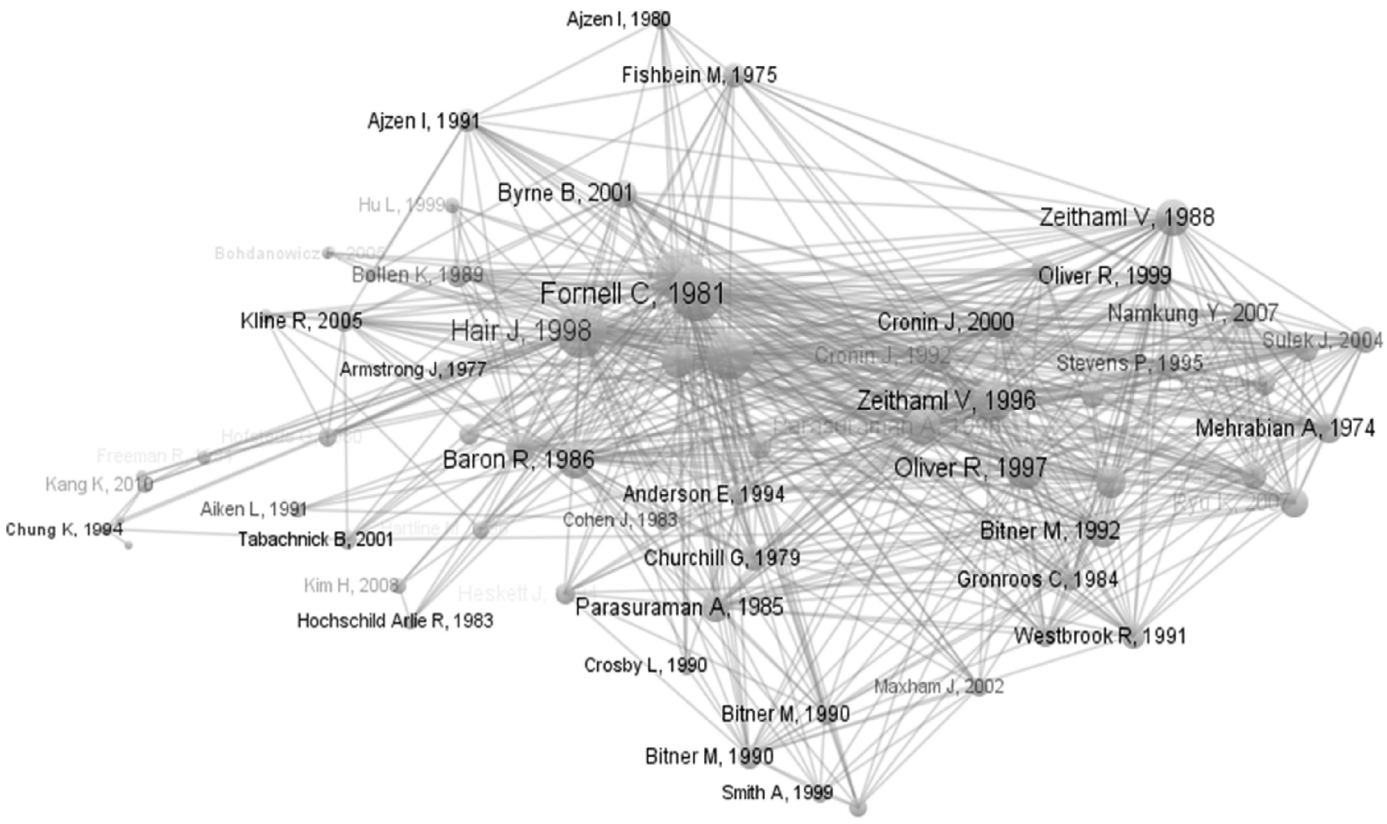

Fig. 2. Intellectual structure of the HM discipline: visualization performed using VOSviewer© – map created using VOS mapping and clustering techniques.

between the service expected and the service received. The other works develop two widely utilized scales for measuring quality service: Servqual (Parasuraman et al., 1988); and Servperf (Cronin and Taylor, 1992).

To conclude, a visualization or graphic representation is offered of the 'intellectual structure' of the discipline which comes as a result of applying VOSviewer®.

VOSviewer® is a computer application specifically designed to build and visualize large scientific knowledge maps. Map-building from bibliographic information is also referred to as scientography – a term which is scarcely utilized in the literature possibly due to the proliferation of others such as 'domain visualization' or 'knowledge domains'. The tool has been developed by the *Centre for Science and Technology Studies* at the University of Leiden (Netherlands) and can be used free of charge.

Nevertheless, although VOSviewer® can be used to build and visualize scientific maps from any kind of co-occurrence data, the application does not permit the creation of networks. This tool has no pre-processing capabilities either, which is why it is necessary to use external software – in our case, Bibexcel® and Pajeck® – so that the data can be prepared for the analysis and their subsequent representation.

In order to position the elements on the map, the application uses the VOS positioning technique (van Eck and Waltman, 2010). This technique builds a similarity matrix from a co-occurrence matrix, which is previously created and loaded into the tool. The similarity measure used is meant to normalize the network and is known as 'association strength' (Coulter et al., 1998; van Eck et al., 2010), or as 'proximity index' (Peters and van Raan, 1993; Rip and Courtial, 1984) or 'probabilistic affinity index' (Zitt et al., 2000). The VOS technique (see Fig. 2) builds a two-dimensional map where the elements are positioned in such a way that the distances between any given pair of elements reflect their degree of similarity as accurately as possible. On the map, each element is represented by a label and a circle. The more important an element is, the bigger its label will be, and the greater volume its associated circle will have.

It is also possible to obtain the previous visual representation of data analyzed by means of VOSviewer® without the need to apply any type of normalization. This can be seen in Fig. 3 and is based on the work of authors such as Vargas-Quesada and Moya-Anegón (2007), according to whom the best visualizations corresponding to the intellectual structure of a scientific discipline are those obtained through the use of co-citation in its pure state, that is, with no normalization.

4. Conclusions, limitations and future research lines

The research developed here is placed within the field which aims to analyze the cognitive structure of a discipline, subdiscipline or scientific field and uses bibliometric methods and social networks analysis (SNA) to achieve that aim. The main contribution made by such works focuses on the utilization of an objective methodology – the co-citation analysis – in order to discover the predominant research strands within a knowledge area. This method can provide researchers with a clear instrument to identify new directions within research and the prevailing paradigms, as well as to place their works inside a specific research field. What is more, the methodology proposed can be highly useful for novice researchers, insofar as its utilization facilitates the identification of the most important contributions with regard to a scientific discipline and the way to structure them.

In our particular case, the analyzed discipline was *hospitality management*. It was possible to identify different fronts or strands which have dominated research. Unlike other systematization proposals, and as highlighted above, our study utilizes an empirical method – the co-citation method – through the analysis of the

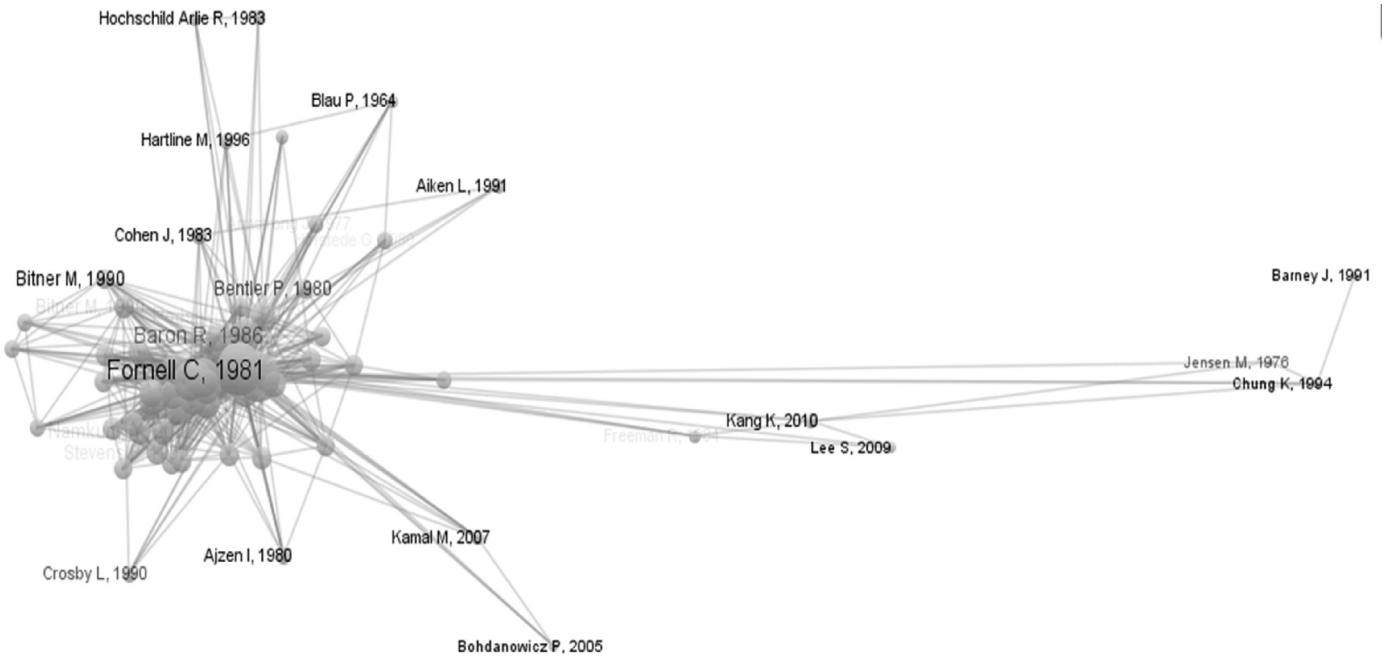

Fig. 3. Intellectual structure of the HM discipline: visualization performed using VOSviewer© – map created without applying any normalization.

papers published in *The International Journal of Hospitality Management* during the last few years (2008–2014).

As for the main findings, it seems surprising to observe how research is dominated by those fronts or streams most closely linked to the discipline of marketing. Our expectation was actually to find some other research front more directly associated with firm strategic management, human resource management or other management areas.

With regard to limitations, the present study has some important ones which – the same as in many other works of the same characteristics – derive from the actual research design; and others which come as a direct consequence of applying the bibliometric techniques used in citation and co-citation analyses. This last type of limitation is mainly due to the fact that such analyses are independent from the context in which they take place. On the whole, when a citation is analyzed, one can hardly predict what proportion is due to the intrinsic quality of the cited work and how much has to do with other factors such as the prestige of the cited journal, of the institution to which the author belongs, the possibility to cite or refer to other works previously published by the citing author, for spurious reasons, or even the development of a deliberate strategy to ensure the publication of one paper in a specific journal, which would imply including other papers published in the same journal amongst the cited references. In any case, and regardless of the reasons why authors cite, the theoretical foundation from philosophy and sociology of science is the same: the joint citation is carried out by the citing author whose work contributes to the cumulative advance of science, repeating old links and finding new relationships between the previous contributions. Another important limitation has to do with the fact that a research work needs time to accumulate influence on a specific research area. Furthermore, it also becomes particularly difficult with regard to the analysis performed to deny or reject the existence of a certain degree of subjectivity when a decision must be made about the number of authors that will finally form part of the analysis.

As for the remaining limitations, the most important one linked to research design derives from the selection of a single publication: in our case, *The International Journal of Hospitality Management*, to carry out the empirical study, a choice that in our case has even determined the time period analyzed (2008–2014), thus limiting the scope of our results, because it was not possible for us to perform the analysis since the year when the journal was founded, that is, since 1982. Obviously, some significant changes might have happened in the results and in the conclusions reached if the range of journals included in the analysis had been enlarged – considering, for example, other reference publications with the field examined, such as *Annals of Tourism* or *Tourism Management* – or the time period under examination had been extended. In any case, the high number of papers considered in our research, 847, allows us to confidently state that the literature dealt with in the present study turns out to be sufficiently representative of the research developed around the discipline under analysis.

With regard to possible research lines for the future, to our understanding, it could be of great interest to analyze, for instance, the changes and evolution in the intellectual structure of the discipline studied so as to determine whether that discipline finds itself at a 'normal science' period or, alternatively, a change of paradigm is taking place. It could also prove interesting to draw a comparison between the results obtained in our research and those others which would derive from applying this same type of analysis, the bibliometric analysis, to the papers about hospitality management published in some other journal in this area such as *Annals of Tourism*.

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