

## A bibliometric analysis of trust in the field of hospitality and tourism

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### ABSTRACT

The emerging field of trust has evolved dramatically with an increasing number of academic publications in this area. However, there is a lack of better clarification to draw a global picture of scientific knowledge, from a statistical perspective, using the three structures of knowledge: conceptual, intellectual, and social, to obtain a structured overview of its characteristics, identify dynamic aspects and find intellectual representations. This paper presents a new insight into scientific production through bibliometric (Bibliometrix) and network (VOSviewer) analysis, not previously fully clarified in hospitality and tourism. A total of 305 articles published between 2004 and 2020 were analyzed, covering 580 authors, 19 journals, and 43 countries. This research's main findings showed that trust is one of the most decisive variables in the digital market, and keywords such as satisfaction, loyalty, service quality are closely related. The results provide clues for further investigation in this field.

### 1. Introduction

After the Covid-19 pandemic crisis, the world tries to return to normality and resume its activities. The governments of all countries need to operationalize political strategies to encourage the recovery of the economy in essential areas such as tourism in Portugal. At the organizations' level, their leaders and managers must make the necessary structural changes to guarantee a return to activity with competitiveness and viability. In times of crisis and normality disturbance, trust is most necessary and vital for organizations' sustainability. According to Ter Huurne et al., (2017), trust is essential to overcome uncertainty, mitigate risks and deal with vulnerabilities.

This crisis causes erosion of confidence and reputation damage in hospitality and tourism (Griffin, 2014). In our perspective, the trust leap occurs when the customers take a risk and return to hotels (Botsman, 2017). To take this risk, the customers have to trust hotels, and hotels must be trustworthy (competent, reliable, benevolent, and integrity), manage their reputation, and communicate trustworthiness (Calvaresi et al., 2019; Hardin, 2002).

Governments and political decision-makers must rethink rebuilding trust to support the hotel industry because hotels cannot build trust (Botsman, 2017; Hosking, 2014). They have to earn it. Regardless of

what hotels do, the customer chooses to give hotels their trust or deny it. It is distinctive because customers attribute it (Botsman, 2010, 2017; O'Neill, 2014, 2018). The hotels cannot make someone trust because trust is partially a product of people's ability to assess others' trustworthiness (Sheppard and Sherman, 1998). Hotels only control what makes them more trustworthy and their reputation (Artigas et al., 2017). Customer's trust is an assigned status, not a hotel-acquired status.

In hospitality, reputation must be managed as a competitive and strategic advantage since it is associated with performance (Zhu et al., 2014) to convey the necessary credibility and boost customer trust. A hotel investment in reputation, through a character in the form of integrity, empathy or honesty, and capacity, such as competence: skills, time, resources, and knowledge (Brammer et al., 2015), will make the most reliable hotel.

Specialist Reputation Strategy or Chief Trust Officer functions are essential to outline strategic, guiding lines, and encourage the implementation of measures that impact the reputation (Su et al., 2017; Zhu et al., 2014), and trust (Martínez and Rodríguez del Bosque, 2013). Consequently, this influences loyalty (Wilkins et al., 2009), customer satisfaction (Kaveh et al., 2012), and service quality (Liat et al., 2014).

Revenue Management (Ivanov and Zhechev, 2012) is a management concept used to calculate the best pricing policy, to optimize the profits

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generated by the sale of a service, based on mathematical simulation models and trend forecast demand by market segment. It is the process of knowing, understanding, anticipating, and reacting to demand trends to maximize the occupation, thus also maximizing revenue. If we segment customers based on trust (Dimitriadis et al., 2011), and sell the right room to the right customer, at the right time, at the right price, through the right distribution channel, with the best cost ratio, then the reputation, becomes a competitive advantage impossible to replicate.

In hospitality and tourism studies, the Revenue Per Available Room (RevPAR) has been used to measure performance. According to Marín-Romero et al. (2020), loyalty and reputation influence RevPAR in hotels. On the other hand, satisfaction and trust are strong determinants of loyalty (Flores et al., 2020; Rather and Hollebeck, 2019). In this way, reputation (from the perspective of supply) and trust (from the perspective of demand) can be the variables that influence revenue through new pricing strategies (Mauri, 2016; Mauri et al., 2019; Sánchez-Pérez et al., 2019), this can improve competitiveness (Mehrez, 2020) and sustainability (Jalilvand et al., 2017).

Literature reviews play a vital role in the process of synthesizing scientific information and describing the state-of-the-art (Aria and Cuccurullo, 2017). The bibliometric approach introduces a systematic and objective process that is transparent, trustworthy, easy to replicate (Aria et al., 2020), and based on statistical techniques (Diodato and Gellatly, 2013). This approach is helpful to network visualization and data exploration to analyze the social, intellectual, and conceptual structure of knowledge (Cuccurullo et al., 2016).

This paper aims at reviewing and summarizing the scientific trust production in the field of hospitality and tourism, through bibliometric techniques, to analyze the evolution and trend research [Objective 1, O1], the origin and evolution of scientific production (by countries [O2], authors [O3], institutions [O4] and collaboration [O5]), the dissemination of production by sources [O6] and the classification and analysis of the content of articles based on the keywords [O7] and citations [O8].

## 2. Trust

Prior studies in various academic disciplines have investigated trust, such as sociology (Lewis and Weigert, 1985), management (Das and Teng, 1998), and marketing (Moorman et al., 1993). Extensively examined in literature, different approaches characterize the concept of trust (Kim and Peterson, 2017; Watson, 2005). Economists and social scientists tend to think in terms of self-interest, and philosophers in terms of reciprocal altruism and touchy-feely (Hawley, 2012).

In the 1990s, researchers from tourism and hospitality began studying the interdisciplinary concept of trust (Akhtar et al., 2019; Liu et al., 2019) and adopt trust theories from psychology and sociology (Morgan and Hunt, 1994). Nowadays, it has become a critical topic (Liu et al., 2019) and has one of the most relevant variables in helping tourism sector businesses succeed (Ponte et al., 2015). According to Wang et al. (2014), the following definition is the most widely used in the field of hospitality and tourism: Trust is “a willingness to rely on an exchange partner in whom one has confidence” (Moorman et al., 1992, p82). Trust is a confident relationship with the unknown (Botsman, 2017). This articulates our expectation that commitments will be fulfilled (Hawley, 2012) with firm belief or ability to predict that the other party will not engage in opportunistic or cynical behavior (Bauer et al., 2002).

Morgan and Hunt (1994, p23) described trust as “existing when one party has confidence in the exchange partner’s reliability and integrity”. The other party will keep his promises based on three main dimensions: competence (perceived skills and abilities regarding performance), benevolence, and integrity (honesty and fulfillment of promises / engagements) (Morgan and Hunt, 1994; Schoorman et al., 2007). Tourism and hospitality scholars tend to view trust as a two-dimensional construct (reliability and integrity) (Wang et al., 2014). However, the benevolence dimension is assumed to play a pivotal role in inducing

trusting relationships (Gregori et al., 2014).

With recent trust breaches in the tourism and hospitality sector, customers need to realize that a service organization has the capabilities to carry out what they promised and is motivated to do so (Castaldo et al., 2010; Jin et al., 2013). In other words, willingness to be vulnerable and the subjective belief that a host will fulfill transactional obligations as the customer understands them (Riquelme and Román, 2014).

Sirdeshmukh et al. (2002) described trust as “expectations held by the consumer that the service provider is dependable and can be relied on to deliver on its promises” (p. 17). There is quite a broad consensus among researchers that a willingness to trust a firm increases consumer confidence, decrease anxiety, uncertainty, and vulnerability (Pavlou et al., 2007), and may result in a solid emotional bond with a service provider (McAllister, 1995; Wang et al., 2014). Trust is an essential component to maintaining continuity in the customer-provider relationship (Han and Hyun, 2015; Luo and Zhang, 2016; Wang et al., 2014) and preserving long-term relationships between individuals, between organizations, and between an individual and an organization (Kantsperger and Kunz, 2010; Morgan and Hunt, 1994).

We identified a recent research domain in hospitality and tourism literature related to new economic cultures, such as collaborative consumption, sharing economy (Cheng et al., 2019; Ye et al., 2020), and the “industrial revolution 4.0”. Scholars tend to view trust as one of the most decisive variables in e-commerce (Wang et al., 2016) that makes online transactions successful in the travel industry (Flavián et al., 2006; Lu et al., 2016; Ponte et al., 2015). The influence of this variable is visible in works related to chat assistants (McLean et al., 2020), online travel agencies (Brun et al., 2020), e-loyalty to tourism sites (Buhalis et al., 2020), travel app users’ intentions (Choi et al., 2019), and intention to use biometric technology (Pai et al., 2018).

## 3. Methodology

In order to increase knowledge, measure, and analyze published scientific literature on trust in the field of hospitality and tourism, a bibliometric analysis was carried out, starting with a search on the Web of Science (WoS) database from Clarivate Analytics. The study was developed based on a strategy composed of three phases: execution plan, data collection, and bibliometrics. The bibliometric analysis was divided into two moments. The first, focusing on the domain, with three analysis levels – sources, authors, and documents - and on the different metrics, such as Bradford’s Law, Lotka’s Law, or H-index, providing objective and measurable data to understand the trajectories of the scientific field. The second, focusing on knowledge structures to analyze the social, intellectual, and conceptual structure (Cuccurullo et al., 2016) across bibliometric techniques, such as collaboration, co-citation, or co-word, using factorial analysis and scientific mapping.

Science mapping allows investigating and drawing a global picture of scientific knowledge from a statistical perspective. It mainly uses the three knowledge structures to present the structural and dynamic aspects of scientific research (Morris and Van der Veer Martens, 2008) and to find representations of intellectual connections (Small, 1973, 1997, 1999). These structures contribute to a complete view of knowledge – the conceptual structure to identify what science is discussing, which are the main themes and trends; the social structure to explain how authors, institutions, and countries interact with each other; and the intellectual structure to describe how the work of a given author influences a certain scientific community (Aria and Cuccurullo, 2017).

Therefore, the bibliometric analysis main research questions are: RQ1: Which are the main research keywords of trust in the field of hospitality and tourism? RQ2: How do an author’s studies on trust influence research in the field of hospitality and tourism? RQ3: How do authors, institutions, and countries interact with each other in studies of trust in the field of hospitality and tourism?

### 3.1. Data collection and search strategy

The data used in this study were obtained from WoS, one of the most comprehensive electronic information sources, with a scientific and multidisciplinary nature. Data collection was carried in June 2020, via a virtual private network (VPN) connection from the University of the Algarve. The term trust [TS =("trust")] was searched for in all indexes of the Web of Science Core Collection, and according to the eligibility criteria, peer-reviewed articles in English and published in prestigious scientific journals were chosen. Systematic literature reviews and articles that were not related to the terms were excluded: hotels, hospitality, tourism, customers, lodger, guests, and clients. The elaboration of the research's design was defined and agreed upon by the authors. No need was felt to deal with discrepancies. According to the methodology's criteria, we selected the Web of Science studies, the most relevant database that validates the studies' quality. The suggestion of [Pahlevan-Sharif et al. \(2019\)](#), which excludes the risk of bias assessment in hospitality and tourism reviews, was followed.

To ensure that the metadata was useful, complete, and comparable, the search by sources was limited. In such way, only those articles with impact factor, and citations (relevance), reviewed and qualified by a selected panel of recognized experts (reliability), in the field of study covered by each journal, were included. To choose the sources, we identify and compile a list of the leading scientific journals in the field of hospitality and tourism, combined the Top-20 ranking of the "Cite Score metrics for journals and serials" (Elsevier), Scholar Metrics (Google), the results of [Law et al. \(2019\)](#) and [Pahlevan-Sharif et al. \(2019\)](#).

The research strategy included all publications dated until 2020, even though the year had not yet ended. The research period (timespan) was not defined, so it covered every year from 1900 to 2020. We exported all available results to text files, including citation information, bibliographic information, abstracts, and keywords. To eliminate duplicate publications and manage the database, we chose the EndNote X8.2 software.

### 3.2. Data analysis and visualization

We chose the open-source statistical R software for the bibliometric analysis and used the Bibliometrix R package 3.0.1 in the Biblioshiny version ([Aria and Cuccurullo, 2017](#)). Descriptive statistics and bibliometric indicators, including annual publication growth, collaboration index (CI), and analyzes of sources, authors, citations, keywords, keywords-plus, and country productivity, were used to produce a data overview. The application and presentation of some of these indicators followed the analysis methodology reported in [Sweileh et al. \(2017\)](#). Visualization techniques were used to analyze knowledge structures: conceptual, intellectual, and social ([Aria et al., 2020](#)) through collaboration networks of authors, institutions, countries, citations and references networks, and keywords networks.

For the visualization of the networks, the VOSviewer software ([Van Eck and Waltman, 2010](#)) was selected, as it uses a unified structure for mapping and clustering ([Waltman et al., 2010](#)) and has been utilized in more than 500 publications since 2006 ([www.vosviewer.com/publications](http://www.vosviewer.com/publications)). According to [Van Eck and Waltman \(2010\)](#), VOSviewer is a software tool for building and viewing networks focusing on graphical representation, and valuable to interpret large bibliometric maps. These networks may include journals, authors, or institutions and can be created based on citation, bibliographic coupling, co-citation, or co-authorship relations. On the visualizations, the circles represent the items under analysis associated with the respective denomination. The wider the circle, the greater the item weight on the network. The distance between items indicates the related degree. The thicker associate lines, the bigger the connection. Location and color are ways of grouping items by clusters.

## 4. Results

### 4.1. Retrieved literature

From the term search "trust" [TS =("trust")] in WoS, we obtained a total of 182631 publications. After applying the eligibility criteria, combined with the "booleans" operators, we obtained a total of 311 articles, according to [Table 1](#). After, we imported the references into the EndNote X8.2 software. After removing duplicates ( $n = 6$ ), 305 articles remained.

The eligible articles have published between 2004 and 2020. The average number of annual publications was 19.06. We observed the highest productivity in 2009, with a total of 59 articles (19.34%) and the lowest productivity between 2004 and 2007, only with three articles (1.00%). The first publication was in the journal "Tourism Management" in 2004. [Fig. 1](#) shows that there was an increase in the number of publications during the study period. In 2008 we identified the point from which the annual growth of scientific production intensified. The average growth in scientific production showed a fluctuating pattern, with rates of 58.74% (2004/2008), 39.16% (2008/2012), 18.92% (2012/2016), and 23.86% (2016/2019), resulting in an average annual growth rate of 24,88% during the study period.

### 4.2. Sources

Only 19 scientific journals published the 305 articles. According to Bradford's Law ([Bradford, 1934](#); [Brookes, 1969](#)), we verified the existence of three clusters: the central zone is composed of 2 journals that published 121 articles (39.70%). An intermediate zone in 3 journals with 85 articles (27.90%), and the smaller zone composed of 14 journals and 99 articles (32.40%). These 3 journals have 5 886 citations which represent 71.20% of the total citations. In [Table 2](#), we can see the impact of the sources calculated through different measures.

### 4.3. Authors

We identified 580 authors, with an average of articles per author of 0.526 and 1.90 authors per article. The average number of co-authors per article was 2.74. A total of 36 articles (11.80%) were of single authorship, and a total of 269 publications (88.2%) were of multiple authorship. We identified 549 authors in 269 articles with multiple authors, representing a collaboration index of 2.04 ([Elango and Rajendran, 2012](#); [Koseoglu, 2016, 2019](#)). Through the analysis of Lotka's Law ([Lokta, 1926](#)) ([Fig. 2](#)), we found 573 occasional authors, and, of these, 448 authors present only 1 article. Only 7 authors (1.20%) can be considered nuclear, with more than 6 articles published. The nuclear author who stands out the most for the number of published articles (22 articles), for the longevity of scientific production (10 years), for the total number of citations (720), and the "h-index" measure (12) is Heesup Han of Sejong University (Republic of Korea).

### 4.4. Countries

We identified the contribution of 43 countries. The USA is the

**Table 1**  
Number of articles found per search.

Search Criteria	WoS
Booleans operators   Indexes = Expanded   Timespan = All years   language = English	182,631
Top-20 sources, NOT systematic OR "literature review" OR review	753
hotel OR hotels OR hospitality OR tourism	689
guest* OR client* OR customer* OR lodger*	326
Publications - articles	311
Remove duplications	305

Legend: own elaboration | software: excel

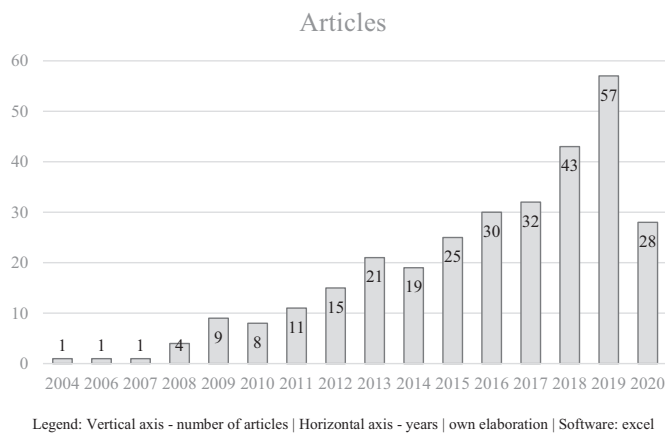


Fig. 1. Annual scientific production.

country with the highest number of citations with 2737 citations, followed by the Republic of Korea and China with 1755 and 1306 citations, representing 33.10%, 21.20%, and 15.80%. In Europe, Spain, and the United Kingdom occupy the 4th and fifth position. Portugal appears in 10th position with 134 citations. Fig. 3 shows the countries with a minimum production of 3 articles and compares single country articles and multiply countries' articles. Portugal has an average of 33.50 citations per article, higher than the USA (31.80) and very close to the Republic of Korea (35.10).

4.5. Citations

On 16 of June 2020, the summary of citations from the 19 combined journals shows 8269 citations with an average of 27.11 citations per article. Each article has an average of 4.58 citations per year. The year with the highest average of citations was 2016 with 9.30, and the lowest was 2005 with a null value. The top 10 articles and authors cited are shown in Tables 3 and 4, respectively, 8 of which are published by "Tourism Management". The publication that received the most citations was "trust and reputation in the sharing economy: the role of personal photos in Airbnb" (Ert et al., 2016), with a total of 312 citations and an average of 62.04 citations per year. The most cited articles included two articles related to reputation, four related to customer satisfaction and loyalty, and the rest of the digital market.

Table 2  
Impact of the sources.

Sources	h_index	g_index	m_index	TC	NP	PY_start
Tourism management	27	35	1,588235294	2863	35	2004
International journal of hospitality management	23	42	1,769230769	1859	59	2008
International journal of contemporary hospitality management	20	32	1,666666667	1164	62	2009
Journal of travel & tourism marketing	14	24	1,076923077	627	32	2008
Journal of hospitality & tourism research	11	14	0,846153846	349	14	2008
Cornell hospitality quarterly	9	18	0,75	419	18	2009
Journal of hospitality marketing & management	8	12	1,333333333	164	13	2015
Current issues in tourism	7	9	0875	160	9	2013
Asia pacific journal of tourism research	6	10	0,666666667	117	12	2012
Journal of destination marketing & management	5	6	1,25	39	9	2017
Annals of tourism research	4	5	0,285714286	142	5	2007
Journal of travel research	4	7	0,4	256	7	2011
Journal of hospitality and tourism management	3	4	1,5	23	10	2019
Journal of sustainable tourism	3	5	0,5	35	5	2015
International journal of tourism research	2	2	0,285714286	20	2	2014
Tourism management perspectives	2	4	0,333333333	21	9	2015
International journal of hospitality and tourism administration	1	1	0,2	2	1	2016
Scandinavian journal of hospitality and tourism	1	2	0,090909091	9	2	2010
Tourism geographies	0	0	0	0	1	2017

Legend: TC – Total Citations | NP – Number of publications | PY\_start – Year of 1st publication | own elaboration | software: excel

4.6. Keywords

The authors indexed the 305 articles with 1 122 keywords and with 752 keywords-plus by WoS. Keywords-plus are more effective than the author's keywords for bibliometric analysis purposes when investigating scientific fields' knowledge structure, but it is less comprehensive in representing an article's content (Zhang et al., 2016). The highlight is the keyword trust with 78 occurrences. Then, satisfaction, loyalty, and relationship quality stood out with 43, 26, and 21 occurrences. The keywords related to collaborative consumption, such as sharing economy and Airbnb, appear in fifth and sixth positions. To quickly understand the critical term and compare the different origins, two tag clouds (Fig. 4) were created, with the top-20 keywords and keywords-plus.

4.7. Structures of knowledge

To answer the three research questions in this bibliometric analysis, we analyze three structures of knowledge: conceptual, intellectual, and social.

4.7.1. Conceptual structure of knowledge

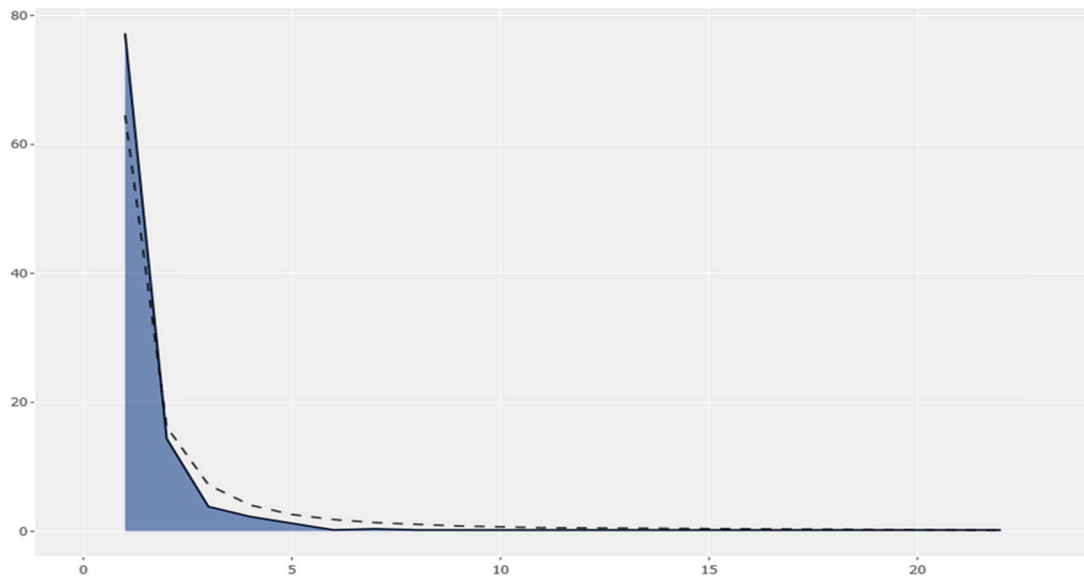
The conceptual structure represents relationships between concepts and words in a set of publications to map what science is studying and explore the different themes developed in research (Aria et al., 2020; Tijssen and Van Raan, 1989). Each field or scientific topic has characterized by authors keywords or WoS keywords-plus (Garfield and Sher, 1993). To map the conceptual structure, we use two approaches: Factor analysis and Co-words network.

We proceeded to factor analysis of the authors' keywords and used the Multiple Correspondence Analysis (MCA) technique to reduce data's dimensionality. According to Abdi and Valentin (2007), this technique is an extension of correspondence analysis (CA), which analyzes several categorical dependent variables' relationships. Analyze a set of observations described by a set of nominal variables. In Fig. 5, we present the conceptual structure map. There are 6 clusters of keywords, identified by different colors, and each represents a specific topic. These clusters mean that the keywords co-occur together in the articles indexing.

From Co-words network visualization, we look for words that appear together in each document and are subsequently related. We used this structure to know the topics covered and identify the most important and recent research field.

The VOSviewer technique mapping of authors' keywords (Fig. 6) showed that keywords such as trust, satisfaction, loyalty, service quality, commitment, customer satisfaction, relationship quality, and perceived





Legend: Vertical axis - % of authors | Horizontal axis – number of documents written | ---- Theoretical distribution | own elaboration | Software: biblioshiny

Fig. 2. Frequency distribution of scientific productivity.

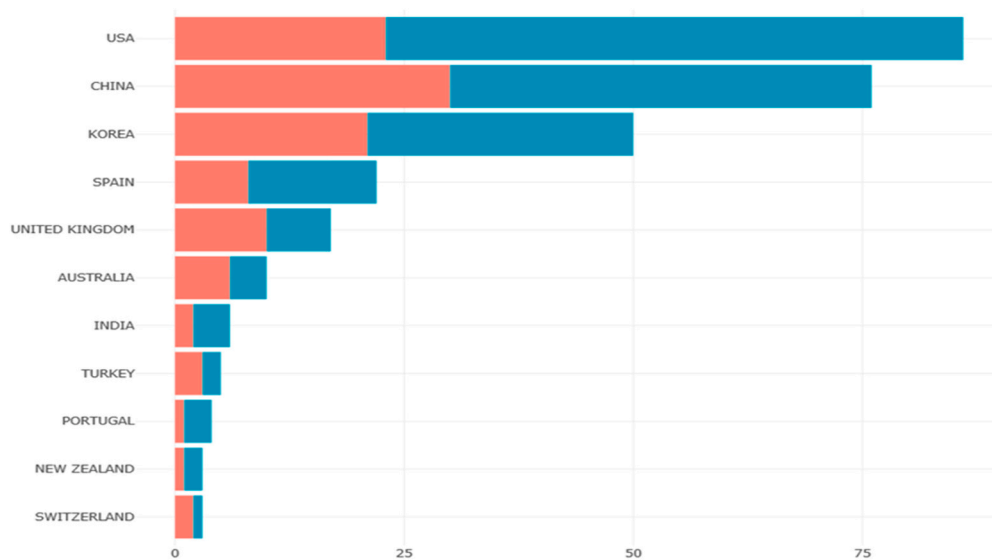


Fig. 3. Corresponding author's country.

value have a close relationship and generally co-occur together. The most recent trend research is associated with new markets and technology evolution, in one cluster with keywords such as Airbnb, Peer-to-Peer accommodation, Sharing Economy, Couchsurfing, and online trust. We can also see a cluster related to risk, associated with keywords such as perceived risk, service failure, or service recovery. In the map's visualization by titles (Fig. 7), we identified 6 clusters. The most related words in each are quality, role, loyalty, trust, hotel, social. The mapping of keywords-plus, although different, show the keyword trust with 47 links and corroborates the central relationships of titles network. In both visualizations, we found strengths links between trust, satisfaction, loyalty, and service quality.

#### 4.7.2. Intellectual structure of knowledge

To detect changes in paradigms or schools of thought, we used the intellectual structure of knowledge and estimated different authors' influence in the scientific community. The most common citation analysis in bibliometrics is the co-citation network (Small, 1973, 1997, 1999). There is a co-citation of two documents when cited in a third document, and we show relations with the references. The 305 articles have 15,508 bibliographic references. In Fig. 8, we see the central relationships between authors in bibliographic references. The 3 clusters visualized are related to methodology, trust, and service quality.

The most prominent authors and cited bibliographic references are: "Evaluating structural equation models with unobservable variables and measurement error" (Fornell and Larcker, 1981), "Structural equation

**Table 3**  
Most cited articles.

TI	AU	SO	PY	TC
Trust and reputation in the sharing economy: the role of personal photos in airbnb	Ert E;Fleischer A;Magen N	Tourism management	2016	312
The effects of perceived justice on recovery satisfaction, trust, word-of-mouth, and revisit intention in upscale hotels	Kim T;Kim Wg; Kim Hb	Tourism management	2009	256
The effect of perceived trust on electronic commerce: shopping online for tourism products and services in south korea	Kim Mj;Chung N;Lee Ck	Tourism management	2011	242
Csr and customer loyalty: the roles of trust, customer identification with the company and satisfaction	Martinez P;Del Bosque Ir	International journal of hospitality management	2013	235
Why do travelers trust tripadvisor? Antecedents of trust towards consumer-generated media and its influence on recommendation adoption and word of mouth	Filieri R; Alguezau S; Mcleay F	Tourism management	2015	185
Modeling roles of subjective norms and etrust in customers' acceptance of airline b2c ecommerce websites	Kim Hb;Kim T; Shin Sw	Tourism management	2009	154
A stage to engage: social media use and corporate reputation	Dijkmans C; Kerkhof P; Beukeboom Cj	Tourism management	2015	151
Customer retention in the medical tourism industry: impact of quality, satisfaction, trust, and price reasonableness	Han H;Hyun Ss	Tourism management	2015	147
Perceived justice in service recovery and behavioral intentions: the role of relationship quality	Ha J;Jang S	International journal of hospitality management	2009	142
Customer engagement with tourism social media brands	Harrigan P; Evers U;Miles M;Daly T	Tourism management	2017	133

Legend: TI – Title | AU – Authors | SO – Source | PY – Year | TC – Total citation | own elaboration | Software: excel

modeling in practice: A review and recommended two-step approach” (Anderson and Gerbing, 1988), “Relationships between providers and users of market research: The dynamics of trust within and between organizations” (Moorman et al., 1992), “The commitment-trust theory of relationship marketing” (Morgan and Hunt, 1994), and “The behavioral consequences of service quality” (Zeithaml et al., 1996).

Network visualization of co-citation analysis of journals for journals (Fig. 9) who published documents on this topic. Is visible the existence of 2 clusters with the same color, in which the journals of each group are commonly co-cited. The journals with the most significant impact are co-cited with other’s journals.

#### 4.7.3. Social structure of knowledge

Through collaboration networks, the social structure analysis shows how authors, institutions, and countries relate to each other and verify the most influential authors, groups of authors, or relevant scientific research institutions (Glänzel, 2002). The most common social structure is the co-authorship network, where the relationships between the

**Table 4**  
Authors impact by H-index and its generalizations.

Author	h_index	g_index	m_index	TC	NP	PY_start
Han H	12	22	1	720	22	2009
Lee Ck	8	9	0667	578	9	2009
Hyun Ss	10	11	0909	473	11	2010
Kim Wg	5	5	0417	377	5	2009
Bilgihan A	5	6	0625	362	6	2013
So Kkf	5	5	0625	349	5	2013
Kim Mj	4	4	0,4	321	4	2011
Chung N	4	4	0,4	302	4	2011
Law R	6	8	0667	178	8	2012
Lee Js	4	4	0333	158	4	2009
Lee Yk	2	4	0222	119	4	2012
Back Kj	4	5	0364	112	5	2010
Kim W	6	7	0,5	109	7	2009
Wu Hc	4	7	1333	103	7	2018
Cheng Cc	4	5	1333	93	5	2018
Kim J	3	4	0,6	93	4	2016
Hwang J	5	5	0833	82	5	2015
Lee H	4	4	0,5	64	4	2013
Busser Ja	3	5	1	28	5	2018
Shulga Lv	3	5	1	28	5	2018

Legend: TC – Total Citations | NP – Number of publications | PY\_start – Year of 1st publication | own elaboration | software: excel

different authors have generally built based on joint publications (Katz and Martin, 1997).

Fig. 10 shows an author collaboration network. The list of authors is determined based on the number of publications in co-authorship. The map includes 21 circles representing the authors, grouped in different clusters by colors. The closest circles indicate authors with close research collaboration. The collaboration index (CI) for articles with several authors remained in 2004–2020, at an average value of 2.04.

The list of countries is determined based on the number of publications in co-authorship. In the visualization map (Fig. 11), Korea plays a significant role and shows a strong collaboration with the USA and China, thus forming a collaboration triangle. The most substantial collaboration, represented by thick lines, is between the following pairs: USA-China, USA-Korea, China-Korea. We identified 7 clusters with a different color. The USA is the country that collaborates with most countries. China and the United Kingdom show themselves to be the bridges connecting the USA to the European and Asian continents.

As for collaboration between institutions (Fig. 12), it is interesting to note that there is a diversified collaboration between American and Asian institutions. Hong Kong Polytechnic University (China) and Sejong University (Korea) were the most productive institutions with 25 articles. Next, the University of Central Florida (USA) has 23 articles. Note the impact of Sejong University (Korea) on intercontinental collaboration, with relations with Oxford Brookes University (Europe), Florida State University (USA), and Hong Kong Polytechnic University (China).

## 5. Discussion

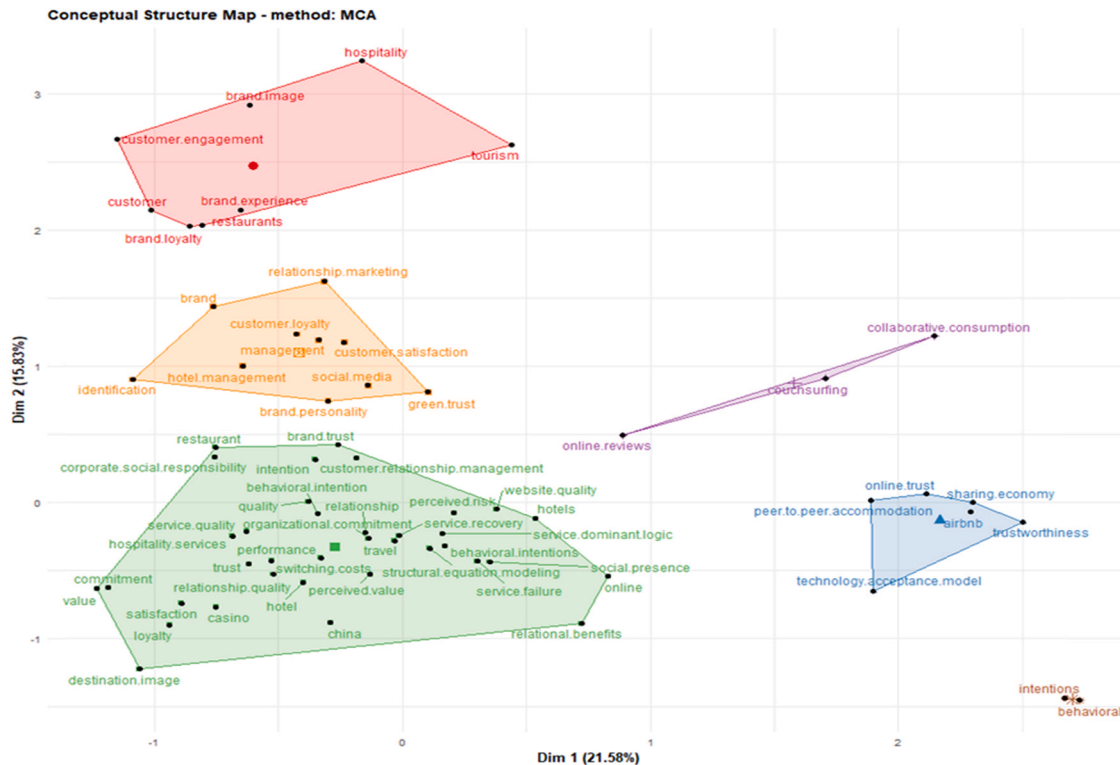
This study aimed to analyze, through bibliometric indicators and visualization techniques, all the published literature on trust in hospitality and tourism and indexed in the WoS. We obtained 182631 publications from the initial research, covering all the years available in the WoS core collection. After applying the eligibility criteria and removing duplicates, our analysis selected 305 articles.

The results show an apparent increase in the number of publications [O1], authors, and collaborations, with a total growth rate of 24.88%. A stable pattern is visible in the number of authors per article. In 580 authors, the average of authors per article is 1.9 and 0.526 articles per author. The lowest value is 1.97 in 2012/2013, and the highest is 3.0 in 2004/2005. Published in 19 journals, only 36 were of single authorship, and the collaboration index (CI) for articles with several authors is 2.04.



Legend: Left - Keywords-plus | Right – Author’s Keywords | own elaboration | software: biblioshiny

Fig. 4. Tag Clouds.



Legend: own elaboration | software: biblioshiny

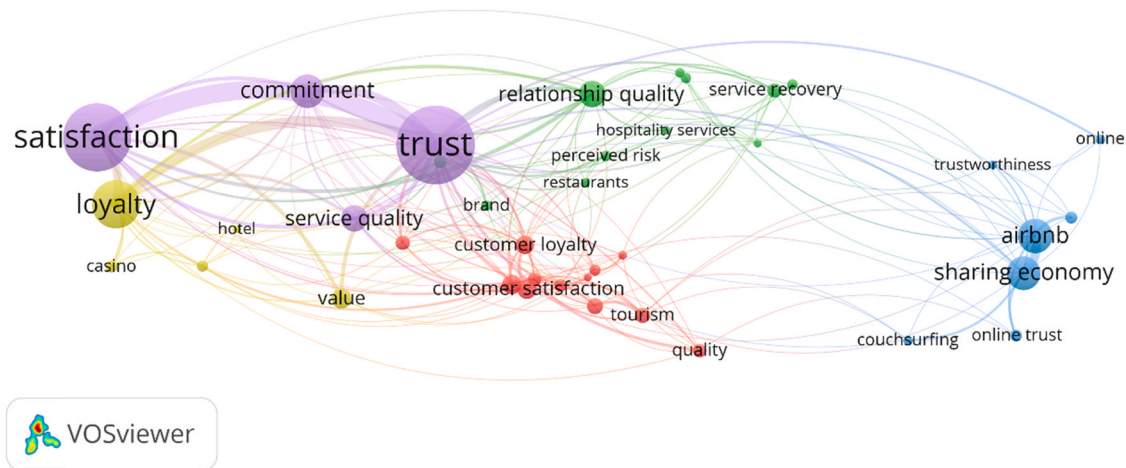
Fig. 5. Conceptual structure map.

Over the years, the CI was stable, without significant fluctuations, and the highest value was 2.5 (2006/2008). This CI is higher than the 1.2 presented by the evolution of hospitality management literature (Koseoglu, 2019). Compared to other research sub-themes, our study has a lower CI than in “Social Media” and “Sustainable Tourism” with 3.4 (Martí-Parreño and Gómez-Calvet, 2020), Airbnb with 2.26 (Andreu et al., 2020), but higher than “Revenue Management in Airline” with 1.85 (Raza et al., 2020), and “Information Technologies” with 0.71 (Khaparde and Pawar, 2013). This CI is probably the result of the authors working in multidisciplinary and interdisciplinary teams since this field covers different management areas, such as strategy, marketing, and organizational behavior. Other reasons may be related to better and more accessible communication among researchers from different institutions and countries, increased pressure from institutions to publish, and multiplication and authorship sharing.

The results show that from 2004 to 2020, there was a general increase in the number of publications in the 19 journals. Indeed, it is congruent with the general growth of 3% of the publications observed

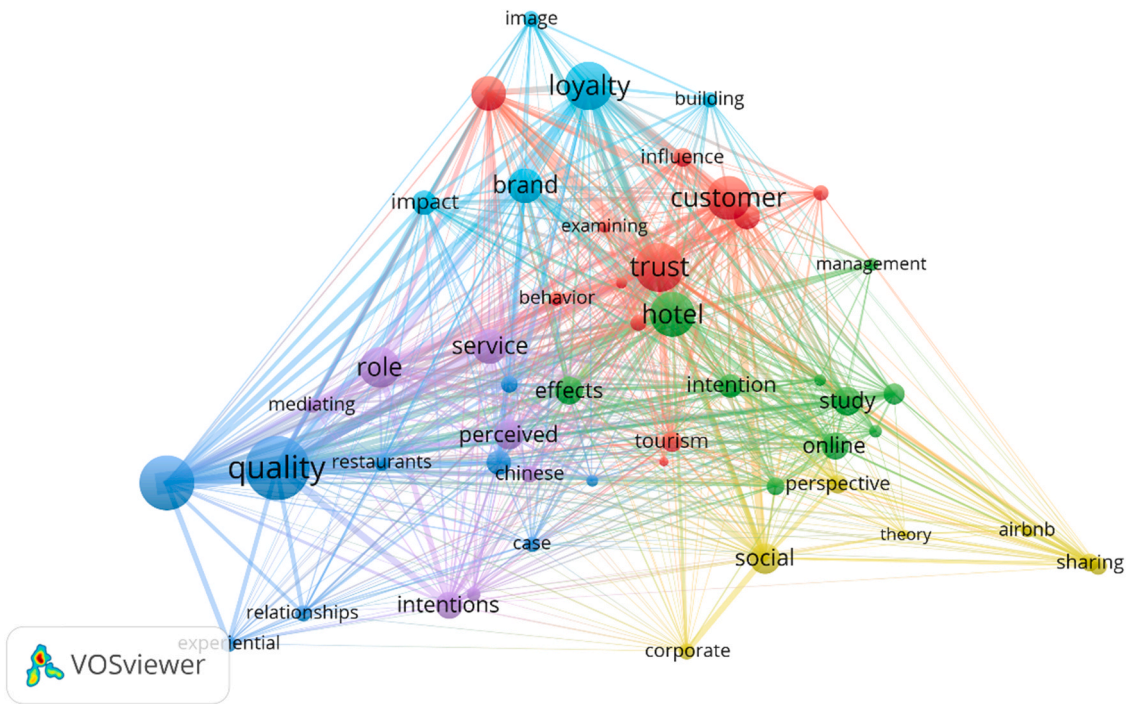
annually in all scientific disciplines. However, our study shows an overall annual growth rate of 24.88%, which mirrors a much faster growth than other disciplines. The number of researchers and the increase in the number of journals could be the reasons for this growth (Ware and Mabe, 2015). Nowadays, there is a growing interest in the issue of trust.

The World Economic Forum in Davos 2019 introduced trust as a variable with a substantial impact on business value. Discussed and analyzed as a strategic component or a competitive advantage factor, the importance of trust was globally accepted. Today, the new “industrial revolution 4.0” is an economic certainty, and the markets are very different. The digital market is vital for competitiveness in the hospitality industry. The characteristics of these new markets bring new challenges to maintain a competitive advantage. The speed of transactions, customer relations, big-data, or decision-making are some examples of opportunities. New economic cultures, such as collaborative consumption, show how to use new technologies, take advantage of unused capacities, and value all types of goods, skills, and spaces on



Legend: own elaboration | Software: VOSviewer

Fig. 6. Co-words network.



Legend: own elaboration | Software: VOSviewer

Fig. 7. Titles network.

unimaginable scales. The factorial analysis - Fig. 5 - shows these recent domains, essential for future research, related to collaborative consumption and the digital market.

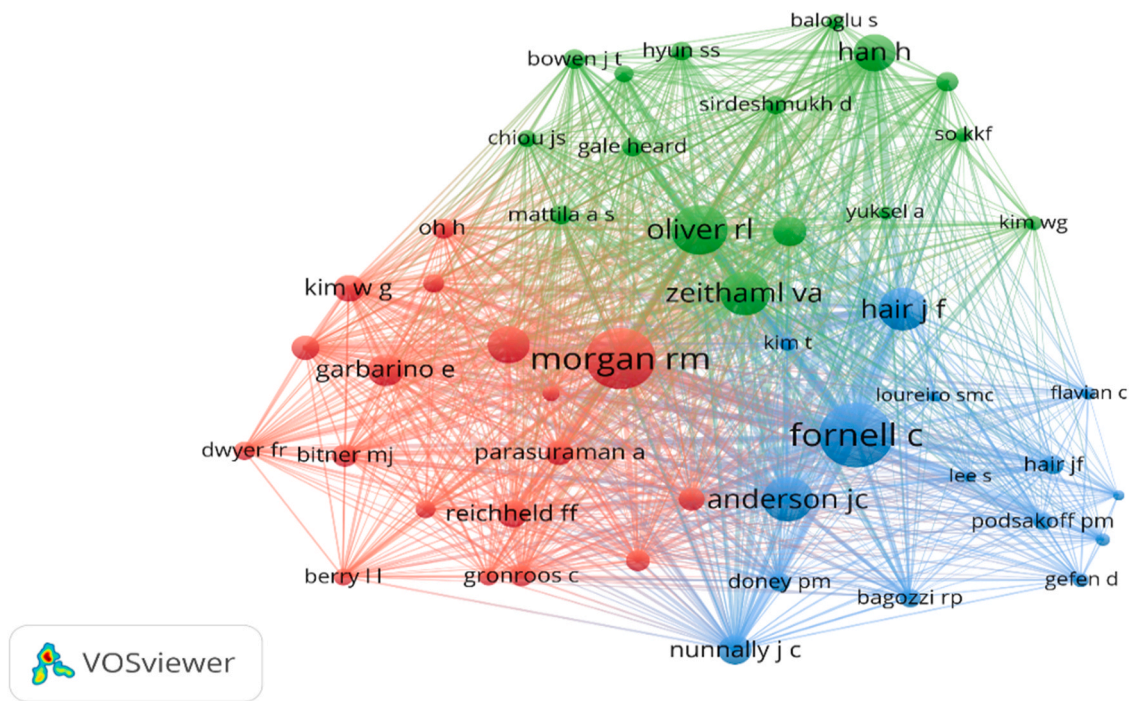
As for the objective [O6], we selected the top-20 journals in hospitality and tourism. The results showed 305 articles published by 19 of these journals. Of the three journals with the most significant impact ("h-index", "g-index", "total citations"), "Tourism Management" was the journal that published the first article in 2004 and more articles in cumulative terms until 2012. The "International Journal of Hospitality Management" is the journal with the most considerable growth over the years. However, in cumulative terms, the journal with the most articles is the "International Journal of Contemporary Hospitality Management".

Until 2010 "Tourism Management" had an active role in this field of

science, although between 2010 and 2014, the "International Journal of Hospitality Management" took this position with an increase in publications (Fig. 13). As of 2014, the "International Journal of Contemporary Hospitality Management" was the main driver. In 2016, there seems to be a possible inverse relationship in the number of articles published between "Tourism Management" and "International Journal of Hospitality Management". With an upward trajectory, the shape curve of the "International Journal of Hospitality Management" seems to mirror that of the "Tourism Management" with a downward trajectory.

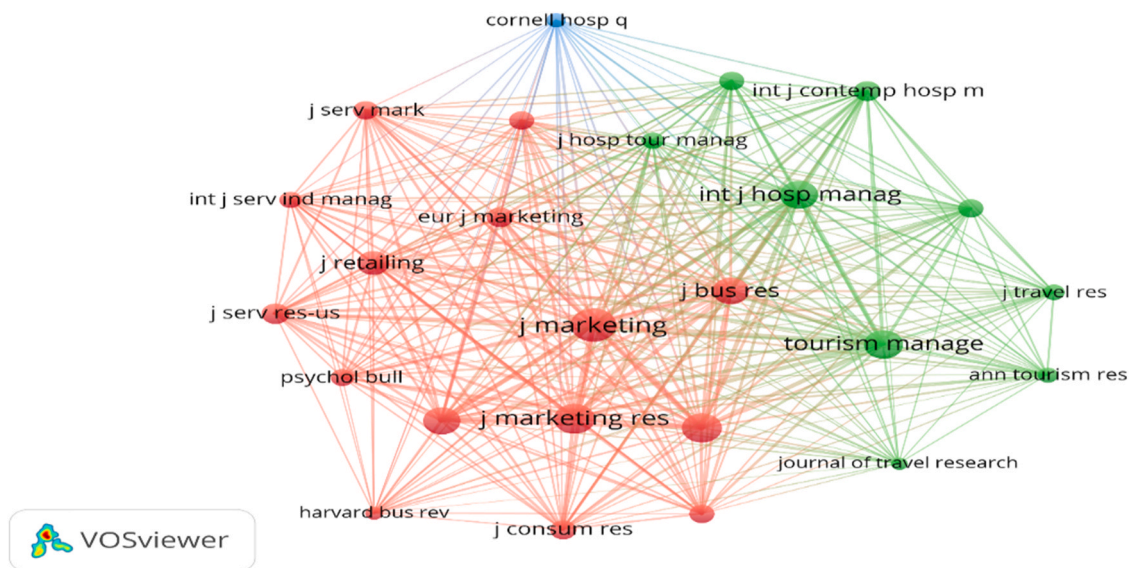
From the results obtained on citations [O8], the 305 articles received a total of 8269 citations, with an average of 27.11 citations per article and 4.57 citations per article/year. This ratio is not a high average compared to other science fields, such as neuroscience, with 187 average citations per article (Patience et al., 2017). However, it is higher





Legend: own elaboration | Software: VOSviewer

Fig. 8. Co-citation network of author for documents.



Legend: own elaboration | Software: VOSviewer

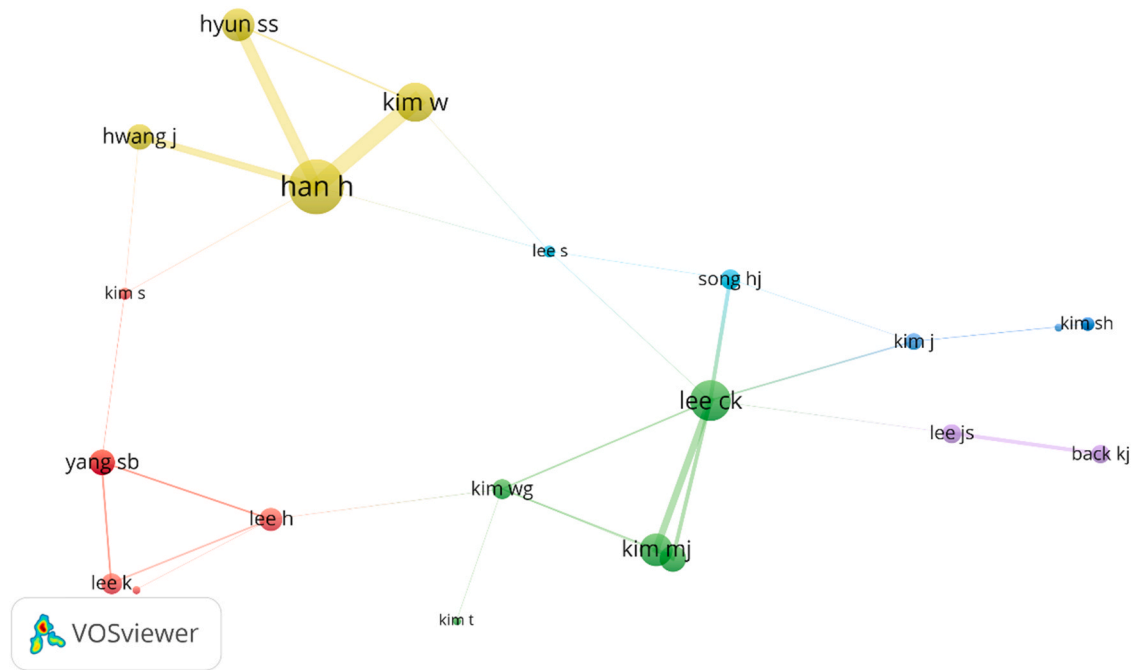
Fig. 9. Co-citation analysis of journals for journals.

than publications in philosophy, law, history, and ethics, which have lower average citations per article (Patience et al., 2017).

The publication that received the highest number of citations was “trust and reputation in the sharing economy: the role of personal photos in Airbnb” (Ert et al., 2016), with a total of 312 citations and an average of 62.04 citations per year. When examining the ten most cited articles (Table 3), we see that eight were published in “Tourism Management” and two by “International Journal of Hospitality Management”. With the highest number of citations, the author was Heesup Han, who received 720 citations. Heesup Han, with 10-year scientific production longevity, is known for his research in the field of hospitality and tourism, with

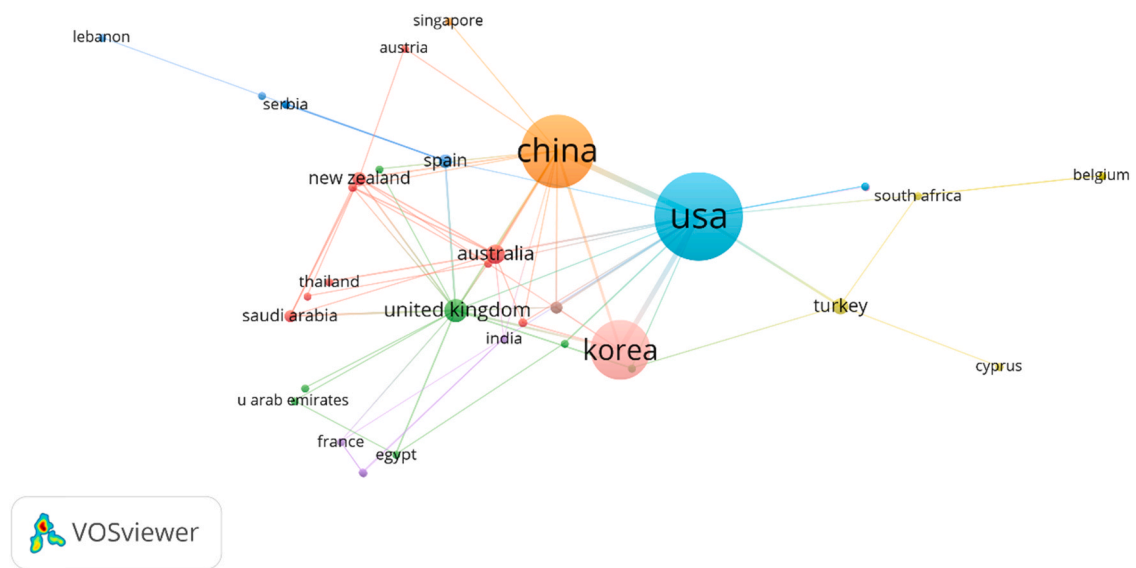
some work on service quality, customer satisfaction, and loyalty. However, these results include only articles published in the 20 selected scientific journals and indexed to WoS in June 2020. If we had used other journals and another index, such as Scopus, the results differed.

When analyzing the country collaboration and international distribution of articles, we found that the USA and China are the countries with the most significant number of publications (USA 28.2% and China 24.9%) and citations (USA 33.1% and China 21.2%) of the total of 43 countries [O2]. The collaboration network [O5] shows a predominance of the USA, which collaborates with more countries and shows Korea’s significant international collaboration role. On the other hand, the



Legend: own elaboration | Software: VOSviewer

Fig. 10. Network visualization of international collaboration between authors.



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Fig. 11. Network visualization of international collaboration between countries.

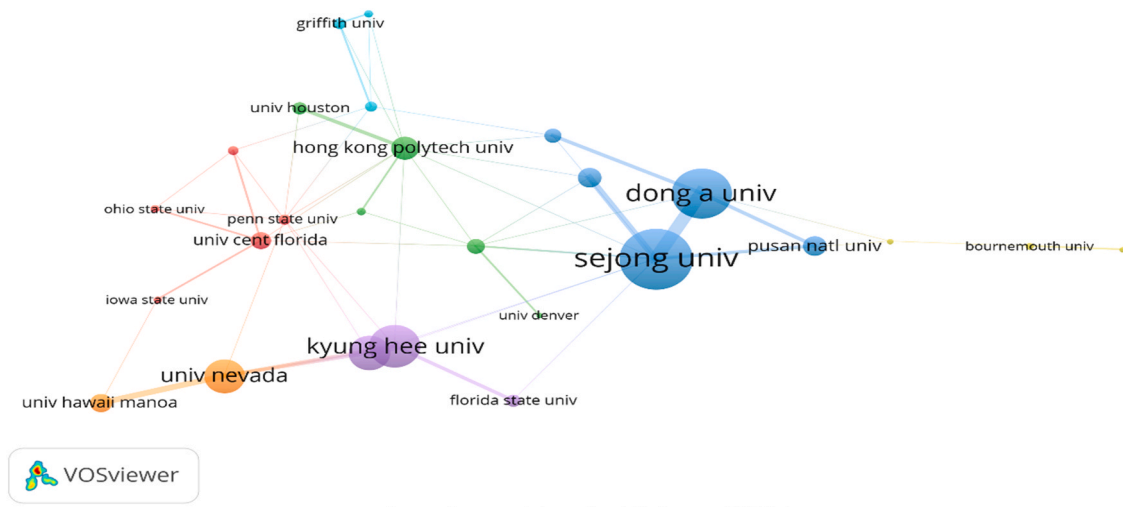
United Kingdom is the reference country in Europe, subsequently promoting collaboration with other European countries. Spain ranks 2nd position and Portugal holds down 3rd place among the European countries with the most scientific production. One of the limitations of our analysis involved not comparing the population of each country. If it were possible, the results would be different. Portugal has an average of 33.5 citations per article, higher than the USA (31.8) and very close to Korea (35.1). These results corroborate part of [Kisjes \(2013\)](#) results on the countries with the most scientific productivity globally, except Korea, which has a key role in this field of science.

The most relevant institutions [O4] are the University of Central Florida (USA), Hong Kong Polytechnic University (China), and Sejong University (Korea), corroborating the results of the most relevant

countries.

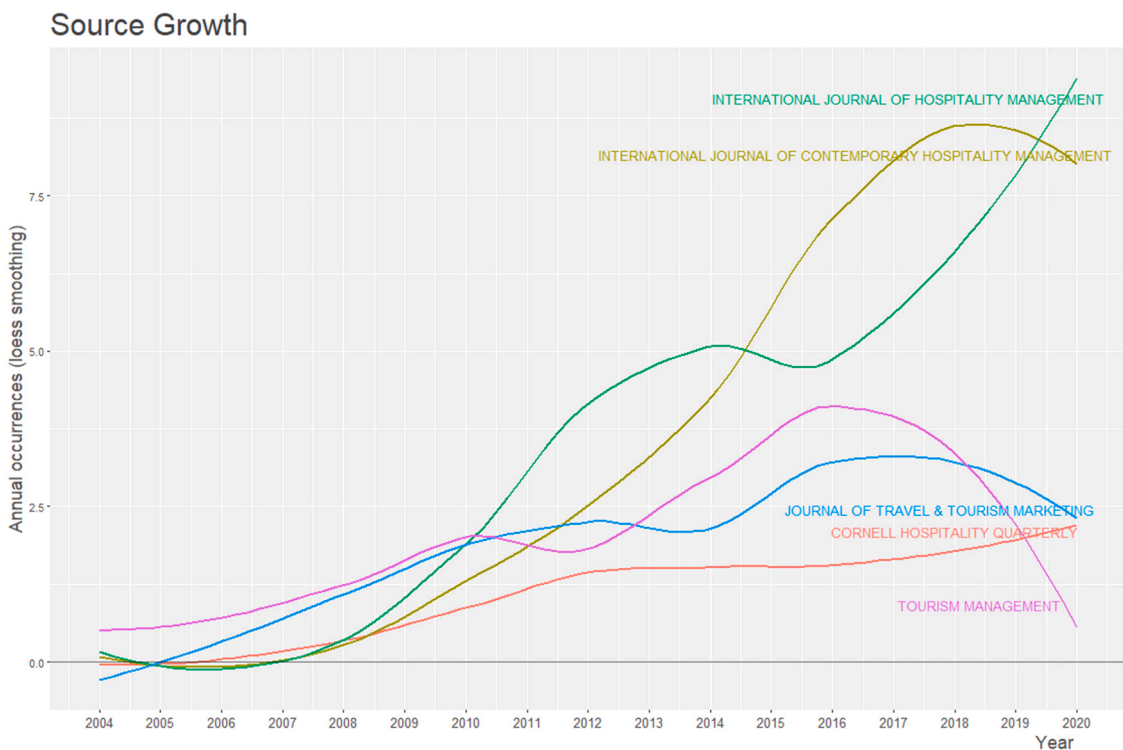
Regarding objective [O3], the [Economist \(2016\)](#) reported the average number of 4.4 authors per article in 2015. This average is higher than our results, with 1.9 authors per article and 2.74 co-authors. Concerning the distribution of the number of authors and their scientific productivity, we found that our articles comply with Lotka's Law ([Lokta, 1926](#)), with a very asymmetric distribution where many authors publish few articles and few authors publish many articles. Of the 580 authors, 448 are occasional authors and have written only a single article. Of the 20 most relevant authors, only 3 have 10-year longevity in scientific production.

Trust trends are visible through the keywords [O7] used by researchers to index articles and the frequency with which they co-occur



Legend: own elaboration | Software: VOSviewer

Fig. 12. Network visualization of the international collaboration between institutions.



Legend: own elaboration | software: biblioshiny

Fig. 13. Source growth.

with other authors and articles. The authors' keywords trust, satisfaction, and loyalty have the highest number of co-occurrences, in addition to connections with other keywords. Over the years, the keywords' accumulated growth curve shows trust's weight, accompanied by words associated with satisfaction, loyalty, and service quality – Fig. 6. These results corroborate the literature, such as the European Customer Satisfaction Index (ECSI), used to assess service quality, loyalty, customer satisfaction, and trust (Askariazad and Babakhani, 2015; Bayol et al., 2000; Kaveh et al., 2012). On the other hand, it is possible to reduce the risk perceived by customers, creating reputation strategies to increase customer confidence, even with trust breaches stemming from the provision of poor-quality service (DeWitt et al., 2008).

It is also interesting to see clusters as a close group of keywords representing research areas. We identified 6 clusters that we call the Sharing Economy; Trust; Hotels; Customer Loyalty; Perceived Value, Brand Loyalty. The main keywords in the trust cluster are service quality, loyalty, satisfaction, and commitment. We found the words brand, behavioral, social media, customer engagement, and marketing relationship in the brand loyalty cluster. These clusters are evident in the network co-citation of journals for journals published on this topic. It is visible that there are 2 clusters, related to marketing journals and to hospitality and tourism journals, in which the journals of each group are commonly co-cited.

In the visualization by titles, we identified 6 clusters, the most

powerful words: quality, role, loyalty, trust, hotel, social, so we cannot dissociate these sub-themes when we talk about hospitality and tourism. Trust is behavior and results from individuals' decision-making. It is people who decide to trust an organization. In terms of hotel activity, it is no different. Rationally, customers decide whether to trust a hotel, what perspective and what level. The customer decides whether the hotel is trustworthy or only attributes certain aspects of the hotel. Thus, the variable is credibility, with trust being a reaction to that same credibility. The hotel must be competent, responsible, honest, and communicate this credibility to the customer with transparency.

In another perspective, over the last few years, we have witnessed an increase in trust incidents, opportunism, trust breaches between organizations and people, with a significant impact on the service's reputation, perceived value, and business sustainability. As we saw in Fig. 14, the use of keywords-plus has changed over the years. We can see that the words quality, commitment, model, and performance co-occur and are used prominently in 2004–2014. Quality is a competitive advantage in Hospitality and Tourism, influenced by the expansion of tourists' rights and their growing awareness of quality. Commitment and quality are two elements that link organizational structures, work design, and performance (Parker et al., 1998). They are a strong indicator and an essential prerequisite for the effectiveness of both (Jackson, 2004). Trust, satisfaction and customer satisfaction enhanced those concepts between 2015 and 2017. Customer satisfaction is one of the leading judgments consumers make concerning tourism services (Rathnayake, 2015). Trust influences customer satisfaction, affecting the tourist's desire to return to the country he visited, giving the floor to others, praising the service provided (Kerdpitak and Heuer, 2016). Finally, keywords such as loyalty, perceived value, and trust appear in more recent publications. Perceived value affects trust and loyalty (Akhoondnejad, 2016). Agapito et al. (2017) concluded that long-term memory could influence perceived value affecting the loyalty to the destination.

Any organization cannot escape the consequences of trust breaches (real or perceived). Reputable capital (such as the value of reputation, intentions, capacity, and values) is vital when inserted in these new

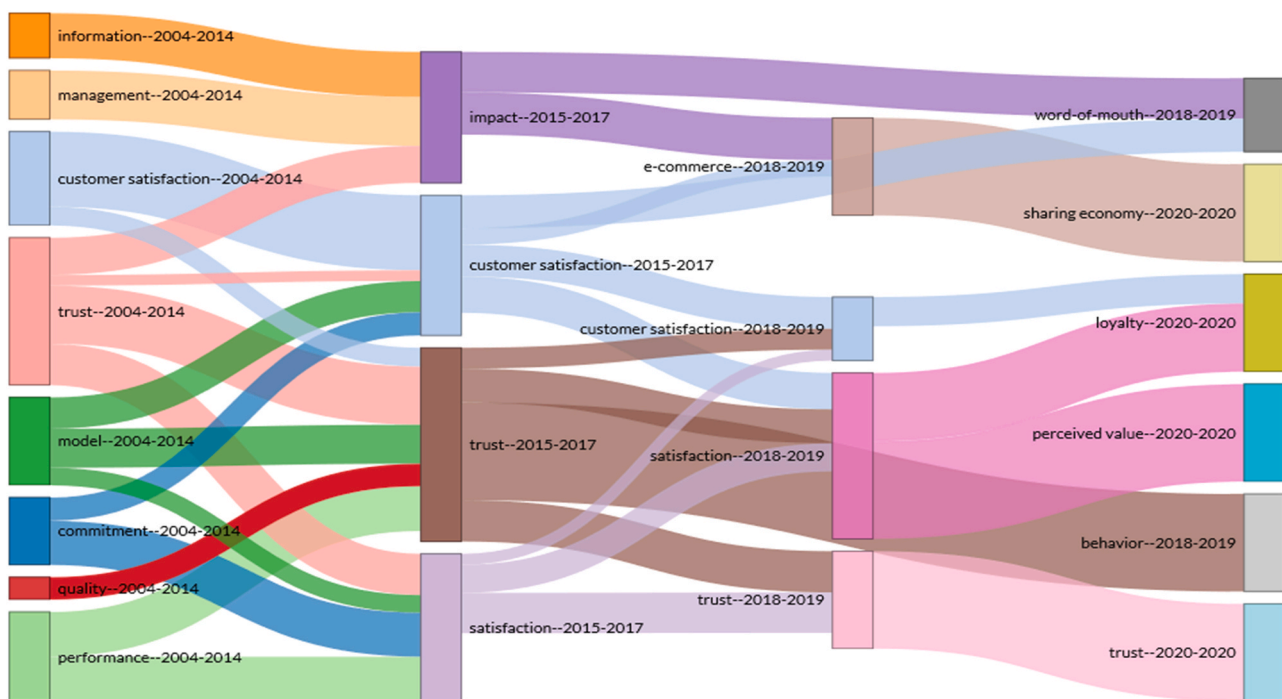
markets and influences the organization's competitiveness (Botsman, 2010, 2017). Reputation influences hotel customers' trust. Trust is a differentiating variable from hotels since customers attribute it as a result of how their reputation is perceived. The findings summary is shown in Table 5.

### 5.1. Implications

The theoretical contribution of this study is to identify the existing research framework on trust in hospitality and tourism and to provide essential inputs for researchers, lecturers, and practitioners. In this field, trust has been a widely discussed concept and the present literature review, analyzes the conceptual, intellectual, and social structure of knowledge. This bibliometric analysis is a valuable method for evaluating scientific production and a useful tool to provide insights to the academia as to the hospitality industry. It compiles the growing number of publications and identifies development trends, future directions, such as e-commerce, digital market, collaborative consumption, and the main themes, as reputation, customer satisfaction, and loyalty. Therefore researchers can recognize influential articles that obtained the highest number of citations. They can identify suitable journals in this field and choose one of the most influential journals to publish or identify international collaborations and potential collaborators in connected countries and institutions.

### 6. Conclusion

After the present COVID-19 situation, the trust leap will occur when customers take a risk and return to hotels. To that end, customers have to trust the hotels, and these must be trustworthy. As a matter of fact, hotels will always be dependent on their customer's decision-making. In order to facilitate this trust leap, the role of reputation management, and of communicating trustworthiness are mandatory, as the hotels' management strategy. If hotels segment customers by trust, they can use revenue management, set prices, and increase revenue to become more competitive and sustainable.



Legend: own elaboration | software: biblioshiny

Fig. 14. Thematic evolution.



**Table 5**  
Objectives and findings summary.

Number	Objective	Findings Summary
[O1]	Trend research	The articles published has a total growth rate of 24.88% between 2004 and 2020. In 580 authors, the average of authors per article is 1.9 and 0.526 articles per author. Published in 19 journals, only 36 were of single authorship, and the collaboration index (CI) for articles with several authors is 2.04. The articles have related to 43 countries.
	Trend clusters research	Sharing Economy; Trust; Hotels; Customer Loyalty; Perceived Value, Brand Loyalty.
	Evolution: Recent domain	Sharing Economy; The main keywords associated per year: [2019] Airbnb, Peer-to-peer accommodation, Online reviews; [2018] Sharing economy, Couchsurfing; [2017] Online trust.
[O2]	Scientific production by countries	USA (207), China (141), South Korea (110), UK (40), Spain (39), Australia (24), India (13), New Zealand (9), Portugal (9).
[O3]	Scientific production by authors	Han H (22), Hyun Ss (11), Lee Ck (9), Law R (8), Kim W (7), Wu Hc (7), Bilgihan A (6), Back Kj (5), Busser Ja (5), Cheng Cc (5).
[O4]	Scientific production by institutions	Hong Kong Polytech Univ (25); Sejong Univ (25); Univ Cent Florida (23); Kyung Hee Univ (21); Sun Yat Sem Univ (17); Univ Nevada (16); Univ Houston (13); Dong A Univ (12), Florida State Univ (12).
[O5]	Scientific collaboration: Countries	Usa/China (28), Usa/Korea (22), China/Korea (6), Usa/Turkey (5), China/Australia (4), UK/Korea (4), Spain/UK (3).
	Scientific collaboration: Institutions	Sejong Univ (11), Florida State Univ (5), Dong A Univ (5), Univ Cent Florida (3), Univ Nevada (3); Hong Kong Polytech Univ (1), Sun Yat Sem Univ (1)
	Scientific collaboration: Authors / Authors	[Han H] Hyun Ss, Kim W, Hwang J; [Lee Ck] Chung N, Kim J, Kim Mj, Kim Wg; [Busser J] Shulga L; [Bilgihan A] Nusair K, Okumus F;
	Scientific collaboration: Authors / Institutions	[Han H] Hong Kong Polytech, Kyung Hee Univ., Sejong Univ., Dong a Univ.; [Hyun Ss] Sejong Univ., Dong a Univ.; [Lee Ck] Univ. Nevada, Hong Kong polytech Univ., Florida State Univ., Kyung Hee Univ.; [Kim W] Sejong Univ., Dong a Univ.
	Scientific collaboration: Authors / Countries	[Han H] USA, China, Korea, UK; [Hyun Ss] USA, Korea; [Lee Ck] USA, China, Korea; [Kim W] USA, Korea, UK;
[O6]	Scientific production by sources	International Journal Of Contemporary Hospitality Management (62), International Journal Of Hospitality Management (59), Tourism Management (35), Journal Of Travel & Tourism Marketing (32), Cornell Hospitality Quarterly (18).
	Dissemination by sources	The most productive per year (source dynamics): [2016] Tourism Management (8), [2017] International Journal Of Contemporary Hospitality Management (10), [2018] International Journal Of Contemporary Hospitality Management (8), [2019] International Journal Of Hospitality Management (18).
[O7]	Content based on the main keywords	Trust (78), satisfaction (43), loyalty (26), relationship quality (21), Airbnb (20), Sharing economy (20), commitment (15), customer loyalty (14), service quality (14), customer satisfaction (13).
	Content based on the main keywords-plus	Trust (183), satisfaction (111), loyalty (75), customer satisfaction (67), commitment (66), model (65), impact (56), service quality (50), quality (46), antecedents (44).

**Table 5 (continued)**

Number	Objective	Findings Summary
	Content based on main words by titles	Trust (57), hotel (56), loyalty (54), quality (51), customer (50), relationship (48), brand (46), social (39), role (35), online (33).
	Content based on main words by abstracts	Customers (557), study (512), trust (464), brand (341), loyalty (308), satisfaction (276), hotel (261), service (246), quality (231), relationship (231), model (229).
[O8]	Content based on citations (references most cited)	Fornell C, 1981, J Marketing Res, V18, P39, Doi 10.2307/3151312 (157),   Morgan Rm, 1994, J Marketing, V58, P20, Doi 10.2307/1252308 (138),   Anderson Jc, 1988, Psychol Bull, V103, P411, Doi 10.1037/0033-2909.103.3.411 (86),   Garbarino E, 1999, J Marketing, V63, P70, Doi 10.2307/1251946 (62),   Bagozzi R. P., 1988, J Acad Market Sci, V16, P74, Doi Doi 10.1007/Bf02723327 (61),   Zeithaml Va, 1996, J Marketing, V60, P31, Doi 10.2307/1251929 (61).

Legend: own elaboration | Software: Excel

This paper presents a structured review on trust, based on statistical techniques, in order to identify influential articles, authors, and research clusters. It was chosen to conduct a network visualization and data exploration so as to analyze the social, intellectual, and conceptual structure of knowledge. After applying the eligibility criteria and removing duplicates, a total of 305 articles published between 2004 and 2020, covering 580 authors, 19 journals, and 43 countries were analyzed.

Over the years, the growing number of keywords shows the weight of trust together with strength keywords such as customer satisfaction, loyalty, and service quality. This is seen as the most traditional and influential research direction because trust is an essential component to maintain the continuity of the customer-provider relationship and preserve long-term relationships.

Our findings identified a large concentration of articles on online transactions, digital market, and e-commerce. For scholars of these recent sub-field domains, trust is the most decisive and relevant variable to help the tourism sector businesses succeed. The consumption collaborative and Sharing Economy is already an economic certainty, and Airbnb, Peer-to-peer accommodation, Couchsurfing, show the trend on the evolution of trust in hospitality and tourism.

The “International Journal of Hospitality Management” is the journal that has grown the most over the years. The article which has received the highest number of citations is “trust and reputation in the sharing economy: the role of personal photos in Airbnb” (Ert et al., 2016), with a total of 312 citations and an average of 62.04 citations per year. The USA and China are the countries with the most significant number of articles, but the dissemination of articles also shows Korea’s significant international collaboration. Though with few highly influential publications, the United Kingdom appeared to be the reference country in Europe, promoting collaboration with other European countries.

### 7. Limitations

Our study has a few limitations. Despite the WoS being one of the most reputable databases, there are non-indexed journals, and therefore, publications in these non-indexed journals may have been lost.

We limited the search by sources so as to have useful, complete, and comparable metadata. We only included 20 journals in our analysis. The aim was to select the most important journals that targeted the research. If we had used other journals and another index, such as Scopus, the results would differ. A limit had to be put to the research dataset dimension, as well, since working with extensive datasets requires innovative bibliometric and network tools. Most of the existing tools

show problems when working with extended datasets.

Also, some authors may have more than one name, use different initials, or have different names in different publications. This limitation can create an imprecision in these institutions or authors' productivity, and generate some divergences in the bibliographic analysis. It was decided to analyze the data without any manual processing.

The geographic distributions of the publications was compared, without taking into account the correction effect of the countries populations. Were it possible, the results would have been different.

## 8. Future research

We stimulate the research on trust in recent digital transformation trends, blockchain, and new economic markets and services and encourage future research efforts to explore how science funding, scholarships, and research centers affect the geographic distribution of articles and literature productivity by countries, authors, and institutions.

Future research may involve a similar study, with the same methodology, in other management fields such as strategy, leadership, or financial management/accounting. Expanding the eligibility criteria may result in a more thorough review. Therefore, additional sources will result in a more extensive set of articles, identify further contributions, and potentially change research trends.

## Author agreement

This agreement is a statement to certify that all authors have seen and approved the manuscript's final version. This manuscript has not received prior publication and is not under consideration for publication elsewhere.

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## Declaration of Competing Interest

This declaration is a notification from the authors that there is no financial interest or belief that could have affected our objectivity.

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