

Review

# A Bibliometric Analysis of Service Climate as a Sustainable Competitive Advantage in Hospitality

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**Abstract:** The purpose of this study is to carry out a systematic literature review and map the service climate in hospitality to discuss the future of the construct as a sustainable competitive advantage. A bibliometric (Bibliometrix) and network (VOSviewer) analysis were conducted in order to review the literature of 63 hospitality service climate articles published between 2005 and 2021, covering 167 authors, 30 journals, 17 countries, and indexed with 241 authors keywords. The “International Journal of Contemporary Hospitality Management” presents the most considerable accumulated growth of the hospitality service climate articles. The content analysis showed a total sample with 3519 customers and 23,068 employees, and all include women and men. The studies were carried out mainly in Asia. The research trend topics revealed that performance is one of the most crucial link factors, and keywords such as service climate, performance, antecedents, and perceptions are closely related. Finally, it is essential to highlight that the new trends are related to technology, industrial revolution 4.0, big data, and HR analytics.



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**Keywords:** service climate; sustainable; competitive advantage; hospitality; bibliometrics analysis; structures of knowledge

## 1. Introduction

In 2021, the World Economic Forum published its report “The Global Risks Report 2021”, in which the deterioration of employment, unemployment, and labour erosion as societal risks are identified. Given this probable risk, strategic decisions that promote competitiveness and sustainability must urgently be made. The sustainable development goal SDG8—decent work and economic growth—promotes productivity and competitiveness. Some vital pathways are education and skills, the workforce and employment, the Fourth Industrial Revolution, and the new markets or the digital economy.

With new changes in labour markets, new leadership perspectives, and new standards of human resources management [1], healthy and sustainable new employment and leadership models are emerging. For the World Economic Forum, an accelerating workforce reskilling is vital to the Fourth Industrial Revolution, in order to increase human resources’ quality and promote the process of turning new ideas in new services into value.

By definition, “competitive” (*Portuguese Priberam Dictionary* [online], 2008–2021, <https://dicionario.priberam.org/competitivo> [accessed on 20 March 2021]) (*adj.*) means having characteristics that allow one to do better than others. These differentiating characteristics, which are often intangible, are the drivers of any competitive advantage. Thus, strategic management must apply models and redesign processes to enhance and exploit these intangible assets, internal capabilities, expertise, systems, and knowledge to become more competitive and sustainable and to increase profitability [2]. According to the resource-based view of organizations [3], competitive advantage is a consequence of the capacity to

develop mechanisms to isolate and protect intangible assets from imitation, including casual ambiguity, complexity, path dependency, and legal barriers [4–6] so as to be sustainable.

Human resources together with their functions and internal processes are the intangible resources most likely to be a real competitive advantage [7] because competing organizations are unable to copy or imitate the behaviors, skills, and attitudes of engaged and committed employees who prioritize the organization's service quality [8].

According to Schneider [9], organizational climate refers to employees' shared perceptions regarding the work behaviors encouraged, supported, and rewarded in a particular organizational setting. It has its foundations in the psychological distance and relative potency proposed by Lewin [10] and appears in the field of organizational studies [11,12]. Climate is a construct related to a specific field [13]. Over the years, a series of climate-related constructions have emerged, including service climate [14], security climate [15], innovation climate [16], and initiative climate [17].

Service climate is the basis of sustainable competitive advantage, a unique intangible asset that is challenging to build and impossible to replicate [18]. Schneider, White and Paul [13] defined service climate as "employee perceptions of the practices, procedures, and behaviors that get rewarded, supported, and expected with regard to customer service and customer service quality" (p. 151). From a strategic management perspective, the service climate is a potential and sustainable competitive advantage due to its inimitability [19], related to customer experiences, and consequently, to financial and commercial performance. Ployhart, Van Iddekinge and MacKenzie Jr. [19] explained service climate's inimitability through Barney [20] attributes. The factors that make each service climate unique are related to the interconnectedness of antecedents and employee engagement, social complexity, and shared understanding, the ambiguity of the policies, practices, and procedures matrix, the adjustment to the external environment, and the service excellence [3,18,20].

To discuss the future of the service climate in hospitality as a sustainable competitive advantage, it is essential that initial criteria are identified based on a literature review. Literature reviews have an important part when it proves necessary to synthesize available scientific information or describe the state of the art. [21]. In order to do so, one of the processes is by means of a bibliometric approach, a methodical and objective procedure, based on statistical techniques [22], which has the advantage of being clear, reliable, and easy to reproduce [23]. In this process, it is also useful to carry out map visualization to analyze the structures of knowledge networks. [24].

This study's purpose is revising and compiling, with the support of bibliometric techniques, the scientific literature in the field of hospitality, specifically related to the service climate. This includes analyzing the evolution and trends of the research field [Aim 1, A1], analyzing the basis and expansion of literature (by country [A2], author [A3], institution [A4], and collaboration [A5]), as well as the distribution of publications by source [A6], classifying and analyzing the data based on keywords [A7], quotations [A8], and finally to extract the content of literature based on instruments [A9].

## 2. Service Climate in Hospitality

Hotels must be learning organizations [25] in order to promote new forms of employment associated with the implementation of new management models based on holacracy [26] and sociocracy [27]. Such models increase flexibility, autonomy, and responsibility in hotel functioning. Employees feel more motivated, engaged, proud, and committed to their role when the hotel develops a unique service climate and an internal culture to deliver superior levels of customer service. This strategic point of view leads to a loyal customer base and therefore to sustained financial returns [28].

In most cases, the first contact of customers with the hotel service is at the reception desk, by means of its contact employees. The contact employee has therefore a vital role in this first service encounter as the interaction between employee and customer is essential for the service experience [29]. At some point, all people are customers, and all customers like to enjoy details that make them feel different, exceptional, and unique, particularly

when they are free of charge. Some of such details are often of minor importance but they do mean a lot to those for whom they are intended. These are details, or moments, which really make a difference in the customer's experience. Employees have to enjoy the feeling of making someone's life better, more enjoyable, and must be able to provide a service that is excellent and exceeds expectations, surprising the customer in a positive way, offering something that will induce, happiness, gratefulness, surprise, and fulfilment. In a hotel, what distinguishes a positive and robust service climate, and differentiates it from the competition, are not the tangible assets or the technical capacity of the resources but rather the professional excellence. In other words, it is the ability to transmit to customers a human dimension, essentially the desire to give an impossible to quantify sense of happiness, this way creating value above what is expected.

Hotels must guarantee a robust service climate that assures positive behaviors and attitudes to serve an excellent service that satisfies customers' needs and expectations, according to their procedures, by innovating and surprising customers [30]. Building and maintaining a competitive advantage in this field needs an untouchable strategy focused on customer service [31].

The service climate can offer a competitive advantage that enhances and rewards service quality and excellence. As a competitive advantage, hotels have to develop management strategies to promote a positive service climate. HRM and leadership must use techniques to engage, attract, and reward employees [1]. A weak service climate does not create value and does not differentiate hotels.

Literature relates service climate with customer experiences, namely service quality [13], customer satisfaction [32], customer trust [33], and customer loyalty [34], influencing the organization's performance [35] and leading to higher profits [36]. The contact employee and personal service moderate the link between service climate and these customer perceptions [18].

Consistent with the Role Theory [37], service-based organizations, customers, and contact employees have an important role to play in hospitality. The contact period—the service encounter—takes place when the customer interacts directly with the service, contact employee, physical facilities, and other tangible or intangible elements. In this service encounter, customers and service providers co-create the service experience, defining roles and scripts based on expected and learned behaviors that should result in desirable outcomes [37,38]. Related to the Role Theory, Susskind et al. [39] showed that a positive service climate is connected to customers' perceptions/attitudes and financial performance. Hong et al. [40] linked HR practices and leadership (antecedents of service climate) to the financial performance through the multi-level connection between the organization, employees, customers, and performance.

In the same multi-level context, empirical evidence leads us to discuss the theoretical assumption that trust must be transversal in hospitality, an antecedent and a consequence of the service climate, mediating the latest with the hotel's financial performance. Trust affects the service climate [41] and the employee's perceived satisfaction. Simultaneously, the service climate directly influences customer trust [33] and financial performance [38]. So, if hotels embrace a strategy based on a culture of trust, they build up a more positive and robust service climate, producing a more excellent awareness of satisfaction in employees. Palácios et al. [42] defended the impact of trust on financial performance. The segmentation of hotel customers based on trust is the necessary input to use revenue management for optimizing pricing to maximize the amount of revenue.

There is no consensus in literature on the service climate dimensions. Bowen and Schneider [18] identified leadership, HRM practices, and support as antecedents of service climate. Leadership behaviors, such as servant leadership [43,44] or ethical leadership [45], are central to the creation and maintenance of a specific service climate. HRM must ensure a service climate that improves employees' positive attitudes. Recent developments in High-Performance Work Systems [46] identify bundles of practices that contribute positively to a better service climate. The aim is to combine HRM practices, work structures, and processes

to maximize employee knowledge, skills, commitment, and flexibility [47]. Support can be actions that sustain and reward the delivery of a quality service, namely managerial or co-worker support [48], or resources that remove obstacles at work, namely system support or work facilitation [13,18]. These resources supporting and facilitating people's work (Schaufeli and Bakker 2004) are inputs to work engagement that make employees feel more vigorous, dedicated, and absorbed in their tasks [34]. In conclusion, employee engagement is a foundation for the service climate [18].

The most significant contributions of this article include the impact of the service climate on organizational processes and innovative corporate strategies. Today, customer experience in hospitality has to be built on sustainability. However, a sustainable hotel is much more than just "green" approaches and environmental issues. Economic progress, vitality, social development, human work–life balance, health, and well-being of the employees are examples of sustainable practices. There is an evident link between sustainability and service climate since this variable is related to the support of co-workers and supervisors, motivational factors, work engagement, and organizational resources with antecedents such as high-performance work systems, leadership, communication, and empowerment. Therefore, implementing new sustainable management models related to decentralization or new hybrid and sustainable service delivery models promotes a more positive and robust service climate. In practice, a hotel investment in such sustainable variables will promote the well-being of employees and, consequently, make the hotel more sustainable, improving customer experience, with an influence on service quality, customer satisfaction, loyalty, trust, and profit.

Creating and maintaining a robust service climate is a crucial element for the competitiveness and sustainability of any organization. Recent research presents a sustainable e-service quality model that captures the relations between service climate and customer experiences [49] and discusses the impact of HR quality and service education, service climate, and service innovation on sustainability [50]. If organizations do not incorporate service climate research as an interdisciplinary service management model, and do not add this asset to their strategy, they are under unsustainable risk.

### 3. Methodology

In order to defragment the available scientific literature production on service climate in hospitality, three steps were followed: planning, data collection, and analysis. Based on the Clarivate Analytics database Web of Science (WoS), the study was divided into three phases. The first, aiming at understanding the trajectories and trends of the scientific field, by means of different metrics, was focused on the domain, specifically on sources, authors, and documents. The second, aiming at developing a complete image of conceptual, social, and intellectual structures from a statistical approach, was focused on science mapping [24]. The last, content analysis, aiming at understanding antecedents, mediators, moderators, and comparing contents such as populations, samples, or measuring instruments, was focused on content.

There are three structures which contribute to a thorough view of knowledge in the field of hospitality and were the base for the core questions of this research: The conceptual structure, which identifies the crucial themes and trends in this field of studies, leads us to RQ1: Which are the focal/core keywords of service climate? The intellectual structure, describing how an author's work influences a specific scientific community, leads us to RQ2: How does an author's literature on service climate inference scientific production? Finally, the social structure, explaining the interaction between authors, institutions, and countries, leads us to RQ3: What kind of interactions do we find in the field of service climate [21]?

### 3.1. Collection and Strategy

The present search was not limited by sources in order to guarantee the validity and integrity of the metadata as well as the possibility to compare it. All articles on the Web of Science—one of the most comprehensive scientific and multidisciplinary information electronic databases—were included. There was consensus in defining the design of the research, and there were no divergences among the authors. There was no need to deal with discrepancies in the content analysis.

An Internet connection was made with a private communications network (VPN) belonging to the Faculty of Economics (University of the Algarve, Portugal) to search for the term service climate [AllFields = (“service climate”)]. According to the criteria of eligibility, scientific articles were searched in all WoS Core Collection indexers until March 2021. The research period (timespan) was not defined, so all the years from 1900 to 2021 were comprised. Inclusion and exclusion criteria were defined: articles in English, peer-reviewed, those included while systematic literature reviews, early access publications, proceedings papers, and articles unrelated to hospitality were excluded. After the search, bibliographic references, abstracts, and keywords were imported into bibliography and references management software (EndNote X8.2) which also was used to reject identical articles.

This study followed the Pahlevan-Sharif et al. [51] recommended items of PRISMA for systematic reviews in tourism and hospitality.

### 3.2. Analysis and Visualization

The application and presentation of this analysis followed the methodology reported in Sweileh et al. [52], and was extended to include a content analysis. The RStudio package (Bibliometrix) in the version 3.0.1 Biblioshiny [21], an open-source statistical software, to produce a data overview, with descriptive statistics bibliometric indicators was chosen. The content data for each eligible article in the present review were manually and individually extracted to an Excel sheet, and segmented into six categories: (i) references of the study (title, authors, and date of publication); (ii) research design; (iii) characteristics of the sample (population, sample size); (iv) location; (v) measure instruments; (vi) main results. For the network visualization, the VOSviewer software was chosen, as it uses a normalized frame for bibliometric mapping [53,54].

## 4. Results and Discussion

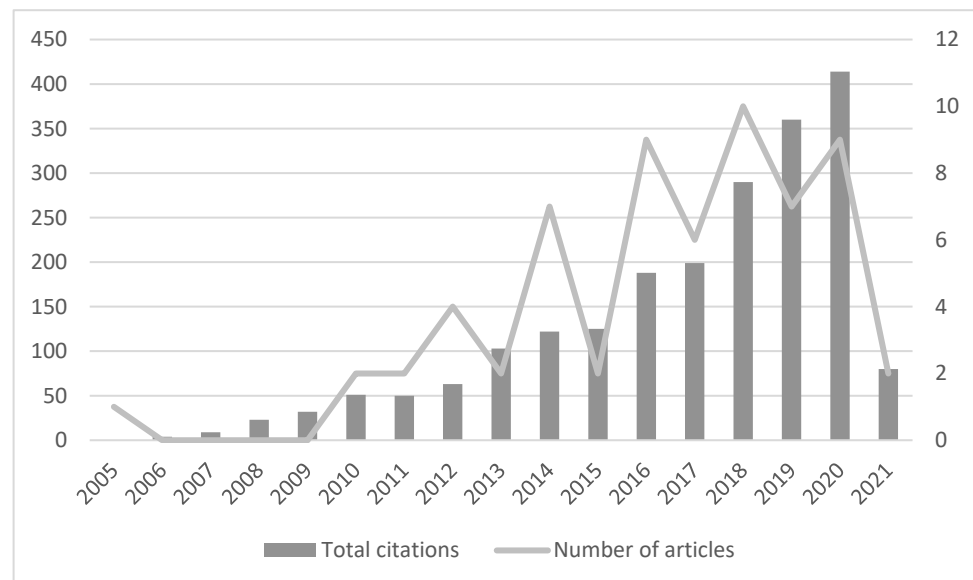
### 4.1. Retrieved Literature

A total of 435 publications were obtained from a search for the term “service climate” [AllFields = (“service climate”) in the Web of Science (WoS), we obtained. After being carefully screened, 365 publications were excluded by the eligibility criteria. After removing proceedings papers (n = 1), early access publications (n = 3), and review articles (n = 3), there remained 63 articles (Table 1).

**Table 1.** Study selection process.

Eligibility Criteria	WOS
index: sci-expanded, ssci, a&hci, cpci-s, cpci-ssh, esci, ccr-expanded	435
Hospitality English articles	70
Proceedings papers	69
Early access publications	66
Review articles	63

The results show that from 2005 to 2021, there was a perceptible growth in the total of publications [A1] and quotations (Figure 1), with an increase rate of 5.95% which is similar with the global 3% in literature observed annually in all scientific fields. This annual growth is explained by the International Association of Scientific, Technical, and Medical Publishers as a consequence of the increasing number of new journals and researchers [55]. However, a growing interest in the issue of the service climate as a competitive advantage, and in its role both at an individual level [56] and at an organization level [43], is arising, together with other constructs which influence performance, sustainability, and competitiveness. The articles were indexed in Social Sciences Citation (n = 56), Emerging Sources Citation (n = 6), Science Citation Expanded (n = 3), and the most well associated WoS categories Hospitality Leisure Sport Tourism, Management, and Business. The year 2014 was identified as the moment in which the annual growth of scientific production increased, with seven articles published (11.11%). The year 2018 had the highest productivity, with 10 articles published (15.87%), and the lowest productivity took place between 2006 and 2008, when nothing was published. The oldest article was published in 2005 in the Journal of Applied Psychology.



**Figure 1.** Annual scientific production. Legend: own elaboration; source: WoS; software: Excel.

#### 4.2. Sources

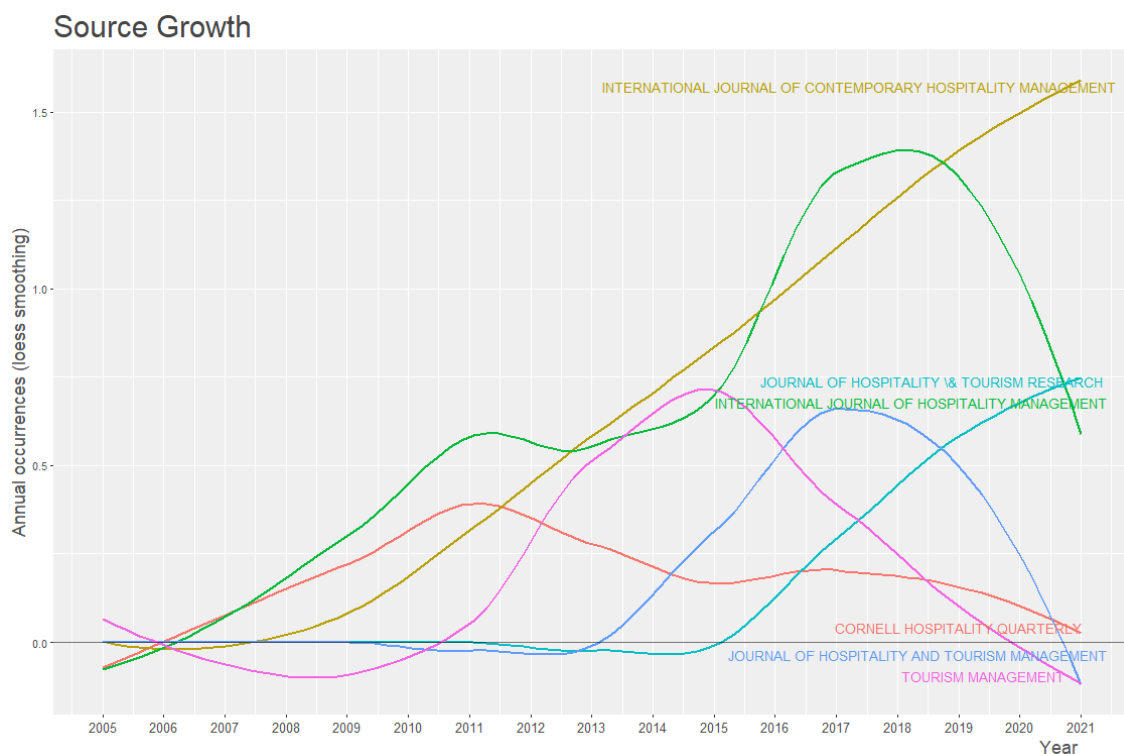
As for objective [A6], the results displayed 63 articles issued by 30 journals. A Bradford's Law analysis [57,58] showed the existence of three clusters: a central zone constituted of only two journals, which published 22 articles (34.92%), an intermediate zone composed of nine journals with 22 articles (34.92%), and a smaller zone comprising 19 journals and 19 articles (30.16%). The two journals with the most significant impact ("h-index", "g-index", "total quotations") were the *International Journal of Hospitality Management*, and the *International Journal of Contemporary Hospitality Management*, both with 11 articles, with a total of 474 quotations, which represented 22.43% of the total quotations (TC = 2113). The most cited source was the *Journal of Applied Psychology*, with 1097 quotations of two articles, representing 51.92% of the total quotations (Table 2).

Table 2. Source impact.

Source	H_Index	G_Index	M_Index	TQ	NP	PY_Start
<i>International journal of hospitality management</i>	7	11	0.583333333	283	11	2010
<i>International journal of contemporary hospitality management</i>	6	11	0.545454545	191	11	2011
<i>Journal of hospitality and tourism management</i>	3	3	0.5	40	3	2016
<i>Tourism management</i>	3	3	0.375	189	3	2014
<i>Cornell hospitality quarterly</i>	2	3	0.166666667	70	3	2010
<i>Frontiers in psychology</i>	2	2	0.4	13	2	2017
<i>Journal of air transport management</i>	2	2	0.4	49	2	2017
<i>Journal of applied psychology</i>	2	2	0.117647059	1097	2	2005
<i>Journal of services marketing</i>	2	2	0.25	15	2	2014
<i>Service industries journal</i>	2	2	0.333333333	17	2	2016
<i>Journal of hospitality &amp; tourism research</i>	1	2	0.25	5	3	2018
<i>Anales de psicología</i>	1	1	0.1	9	1	2012
<i>Asia pacific journal of tourism research</i>	1	1	0.142857143	21	1	2015
<i>European journal of work and organizational psychology</i>	1	1	0.090909091	10	1	2011
<i>International journal of hospitality &amp; tourism administration</i>	1	1	0.25	20	1	2018
<i>International journal of management science and engineering management</i>	1	1	0.2	6	1	2017
<i>Iranian journal of management studies</i>	1	1	0.166666667	5	1	2016
<i>Journal of east-west business</i>	1	1	0.166666667	2	1	2016
<i>Journal of hospitality and tourism insights</i>	1	1	0.333333333	2	1	2019
<i>Journal of hospitality marketing &amp; management</i>	1	1	0.333333333	4	1	2019
<i>Journal of service theory and practice</i>	1	1	0.5	3	1	2020
<i>Journal of sustainable tourism</i>	1	1	0.142857143	27	1	2015
<i>Journal of travel &amp; tourism marketing</i>	1	1	0.166666667	1	1	2016
<i>Land use policy</i>	1	1	0.333333333	8	1	2019
<i>Managing service quality</i>	1	1	0.1	11	1	2012
<i>Marine mammal science</i>	1	1	0.125	13	1	2014
<i>Spanish journal of psychology</i>	1	1	0.125	2	1	2014
<i>Journal of interdisciplinary mathematics</i>	0	0	0	0	1	2017
<i>Journal of retailing and consumer services</i>	0	0	0	0	1	2020
<i>Sustainability</i>	0	0	0	0	1	2021

Legend: TQ—total quotation; NP—number of publications; PY\_start—year of the first publication. Own elaboration; source: R Studio biblioshiny; software: Excel.

Currently, the *International Journal of Contemporary Hospitality Management* is the principal source, and since 2008 it has presented (in annual terms) a constant growth of literature. In Figure 2, we can see the dynamics of growth (per year) of the six most relevant sources. Until 2014, the *Tourism Management* had a vital role in the field of the present study, in spite of the fact that between 2015 and 2018, the *International Journal of Hospitality Management* was the main driver, with a rise in the number of articles (Figure 2). In 2017, there seemed to be a potential inverse trajectory between the number of articles published in the *Tourism Management* and the *Journal of Hospitality and Tourism Research*. After 2015, the shape of the curve of the *International Journal of Hospitality Management* seemed to reflect that of the *Journal of Hospitality and Tourism Management*, with a downward trajectory since 2018.



**Figure 2.** Growth dynamic. Legend: source growth, per year; own elaboration; source: R Studio biblioshiny; software: R Studio biblioshiny.

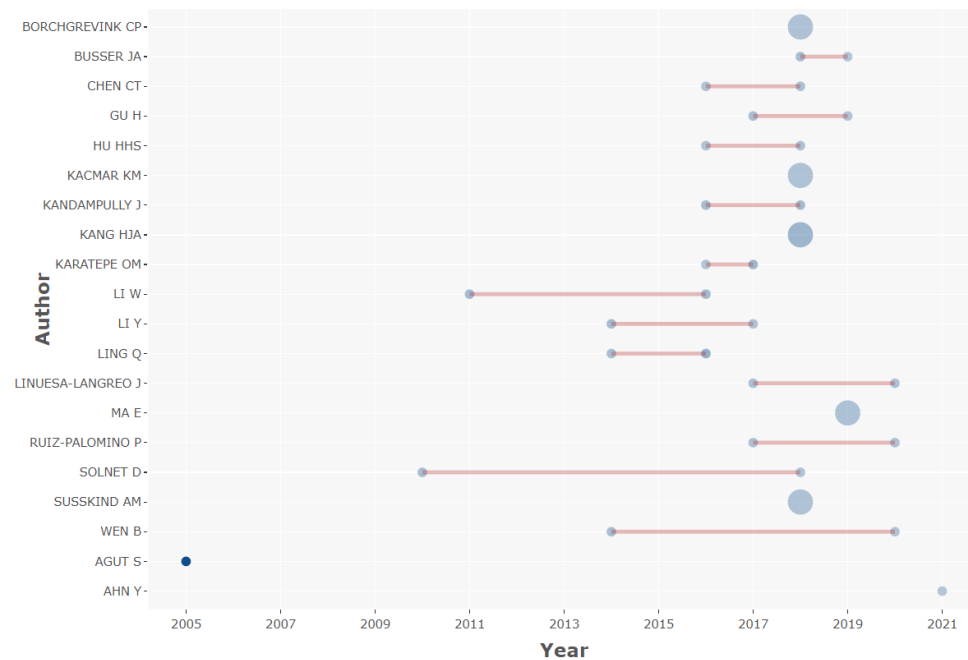
#### 4.3. Authors

A total of four articles (6.35%) were of single authorship, and 59 articles (93.65%) were of numerous authorship. In these, 163 authors were identified, revealing a collaboration index of 2.76 [59,60]. The Collaboration Index (CI) was steady, without relevant variations, and the most elevated ratio was 3.44 (2013/2015). This CI is presumably a consequence of the fact that researchers work in multidisciplinary and interdisciplinary collaboration, as hospitality and tourism comprise a number of diverse topics related to the social sciences, namely, within the scope of economic and management sciences, such as organizational culture [61], ethics [62], and leadership [44,63]. Another reason may be justified to available and more acceptable collaboration between authors from diverse origins. An example of this international collaboration is that of Steffen Raub (Ecole Hôtelière de Lausanne, Switzerland) and Hui Liao (Robert H. Smith School of Business, USA), with the article “Doing the Right Thing Without Being Told: Joint Effects of Initiative Climate and General Self-Efficacy on Employee Proactive Customer Service Performance”. Through an analysis of Lotka’s Law [64] for scientific productivity, 149 occasional authors (89.2%) with one article were found. Only 18 authors (10.8%) can be considered “core authors” with more than two articles published. Of the 20 most relevant authors, only three had more than five-year longevity in scientific production (Figure 3).

The single author with the most quotations is Chia-Jung Chou, with 112 quotations of the article “Hotels’ Environmental Policies and Employee Personal Environmental Beliefs: Interactions and Outcomes”. The co-authors with the most significant impact measured by total quotations are Margarita Salanova, Sonia Agut, and Jose Peiro, followed by Steffen Raub and Hui Liao with 122 quotations of “Doing the Right Thing Without Being Told: Joint Effects of Initiative Climate and General Self-Efficacy on Employee Proactive Customer Service Performance”. David Solnet, with eight-year literature longevity (Figure 3), is notorious for his scientific production in service management, leadership, and HRM practices, and Hee Jung Kang is the most productive, with two articles as principal author and one as the last author. These results include solely publications in the data analyzed



and indexed to WoS in February 2021. Had other indexes been used, the data results would have differed.



**Figure 3.** Top authors' production over the timespan. Legend: authors/years; own elaboration; source: R Studio biblioshiny; software: R Studio biblioshiny.

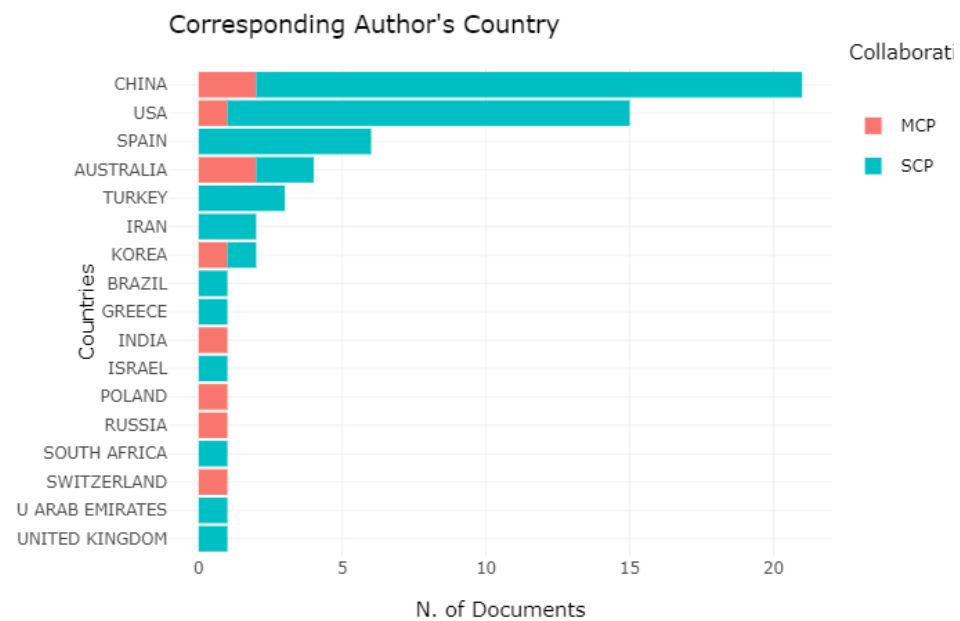
#### 4.4. Countries

Of the total of 17 countries [A2], the ones with the most quotations are Spain (1010) and China (595), representing 47.8% and 28.1%, respectively. Spain occupies the first position in terms of average quotations per year, with 168 quotations/year, and Switzerland is in second place with 122 quotations/year. Figure 4 shows the international collaboration intensity of countries (MCP—multiple countries publication). In absolute terms, China (MCP ratio = 0.0952) has two articles, and the USA (MCP ratio = 0.0667) has one article where at least one co-author is from a different country. However, a higher international collaboration (MCP ratio = 1.0) was found for four different countries: Poland, Russia, Switzerland, and India, but they only have one multiple-country article.

#### 4.5. Quotations

From the quotations analysis [A8], 63 articles collected 2113 quotations, with an average of 33.54 quotations per article and 3.58 quotations per article/year. As a matter of fact, this is not a big ratio compared to other literature fields, such as environmental sciences, which has an average of 159 per article. However, it is higher than language, linguistics, social issues, and demography [65].

The total number of quotations per year of the 63 articles has grown steadily over the years: it was 290 in 2018, 360 in 2019, and 414 in 2020. The average number of quotations per year is 132.06. The publication year with the superior mean number of quotations was 2005 with 60.94, and the lowest was 2019 with 1.57 (Table 3).



**Figure 4.** Corresponding author's country. Legend: countries/number of publications; dark—multiple countries publications; clear—single country publication. Own elaboration; source: R Studio biblioshiny; software: R Studio biblioshiny.

**Table 3.** Quotation impact per year.

Year	Total Quotations TQ (63 Articles)	Number of Articles	MeanTQperArt	MeanTQperYear	Citable Years
2005	0	1	975	60.9375	16
2006	4	0	0	0	0
2007	9	0	0	0	0
2008	23	0	0	0	0
2009	32	0	0	0	0
2010	51	2	44.5	4.045454545	11
2011	50	2	33	3.3	10
2012	63	4	59.25	6.583333333	9
2013	103	2	28.5	3.5625	8
2014	122	7	30.57142857	4.367346939	7
2015	125	2	24	4	6
2016	188	9	23.44444444	4.688888889	5
2017	199	6	13	3.25	4
2018	290	10	10	3.333333333	3
2019	360	7	3.142857143	1.571428571	2
2020	414	9	1.777777778	1.777777778	1
2021	80	2	0	0	0
	2113	63			

Legend: O—occurrences. Own elaboration; source: R Studio biblioshiny; software: Excel.

Table 4 ranks the top 10 most cited articles. In this top 10, the source *Cornell Hospitality Quarterly* published one article. The *International Journal of Hospitality Management*, *Tourism Management*, and the *Journal of Applied Psychology* published two articles each, and the *International Journal of Contemporary Hospitality Management* published three articles. It should be noted that the two most cited articles were those published by the *Journal of Applied Psychology*. Salanova, Agut and Peiro [34] received the highest number of quotations, 975, with an average of 57.35 quotations per year. These authors added the affective and motivational employee responses (psychological predictors) to HRM practices and organizational characteristics (organizational predictors) to understand how service climate is built, felt, and shared. The Job Characteristics Theory [66] recognized this motivational facet of resources. According to the Conservation of Resources Theory [67], the creation, maintenance, and accumulation of resources are the essential human motivation. When employees are engaged and working together, they share beliefs and emotions and

influence co-workers to have the same patterns of motivation and behavior [34,68,69]. As an antecedent of the service climate, the connection between HRM practices and employees' behaviors can be explained by integrating the Social Information Processing Theory [70] and the Social Exchange Theory [71]. According to these theories, organizational practices are perceived and interpreted by employees, who subsequently adopt specific behaviors based on the norm of reciprocity and use the information in decision making regarding further actions [72]. Two articles were found [46,72] on the role of the service climate in relationship with high-performance HRM practices and organizational citizenship behavior (OCB) in hospitality. Tang and Tang [72] developed a measure of service-oriented high-performance HRM practices in hospitality, as a system with a specific service-quality focus, designed to increase employee abilities, motivation, and opportunities [73] in order to provide satisfying services to customers.

**Table 4.** Top 10 cited articles.

AU	TI	PY	Total Quotations	TC per Year	SO
Salanova, M.; Agut, S.; Peiro, J.M.	Linking Organizational Resources And Work Engagement To Employee Performance And Customer Loyalty: The Mediation Of Service Climate	2005	975	57.353	Journal Of Applied Psychology
Raub, S.; Liao, H.	Doing The Right Thing Without Being Told: Joint Effects Of Initiative Climate And General Self-Efficacy On Employee Proactive Customer Service Perform	2012	122	12.2	Journal Of Applied Psychology
Chou, C.J.	Hotels' Environmental Policies And Employee Personal Environmental Beliefs: Interactions And Outcomes Promoting Service-Oriented Organizational Citizenship Behaviors In Hotels: The Role Of High-Performance Human Resource Practices And Organizational So	2014	112	14	Tourism Management
Tang, T.W.; Tang, Y.Y.	Effect Of Servicescape On Customer Behavioral Intentions: Moderating Roles Of Service Climate And Employee Engagement	2012	95	9.5	International Journal Of Hospitality Management
Chang, K.C	The Trickle-Down Effect Of Servant Leadership On Frontline Employee Service Behaviors And Performance: A Multilevel Study Of Chinese Hotels	2016	66	11	International Journal Of Hospitality Management
Ling, Q.; Lin, M.; Wu, X.	Service Climate, Employee Commitment And Customer Satisfaction Evidence From The Hospitality Industry In China	2016	64	10.667	Tourism Management
He, Y.; Li, W.; Lai, K.K.	Service Climate And Customer Satisfaction In A Casino Hotel: An Exploratory Case Study	2011	56	5.091	International Journal Of Contemporary Hospitality Management
Kralj, A.; Solnet, D.		2010	48	4	International Journal Of Hospitality Management

Table 4. Cont.

AU	TI	PY	Total Quotations	TC per Year	SO
Way, S.A.; Sturman, M.C.; Raab, C.	What Matters More? Contrasting The Effects Of Job Satisfaction And Service Climate On Hotel Food And Beverage Managers' Job Performance	2010	41	3.417	Cornell Hospitality Quarterly
Fu, H.; Li, Y.; Duan, Y.	Does Employee-Perceived Reputation Contribute To Citizenship Behavior? The Mediating Role Of Organizational Commitment	2014	37	4.625	International Journal Of Contemporary Hos- pitality Management

Legend: TI—title; AU—authors; SO—source; PY—year; TC—total quotation. Own elaboration; source: R Studio biblioshiny; software: Excel.

Figure 5 shows the results of the quantitative method Reference Publication Year Spectroscopy (RPYS) used to identify the historical roots of research. According to Marx, et al. [74], this method analyzes the frequency with which references are cited in the publications of a specific research field in terms of the publication years of these cited references. The temporal roots are grouped into three categories: theories, methodologies, and instruments. In 1960, the norm of reciprocity [75] was the preliminary approach to the Social Exchange Theory [71]. In 1977, the historical milestone was associated with the Social Learning Theory [76] and the Social Information Processing Theory [70]. In 2000, the Multilevel Theory was identified as an historical root [77,78]. The two-step approach to modelling structural equations [79], multiple regression [80], and the model of service employee management that examines constructs simultaneously across three interfaces of the service delivery process, manager–employee, employee–role, and employee–customer [81], are three milestones in terms of methodology. The year 1998 was fundamental for research, with two reference instruments to measure organizational service climate. Lytle et al. [82] developed a SERV \* OR scale with ten dimensions to measure service orientation. In the same year, Schneider, White and Paul [13] developed the Global Service Climate Scale, which provides a seven-item scale. The reduced version of this scale, translated into Spanish and used by Salanova, Agut and Peiro [34], comprises four items and evaluates how well the work is performed and how excellent quality service is provided, through a seven-point Likert scale.

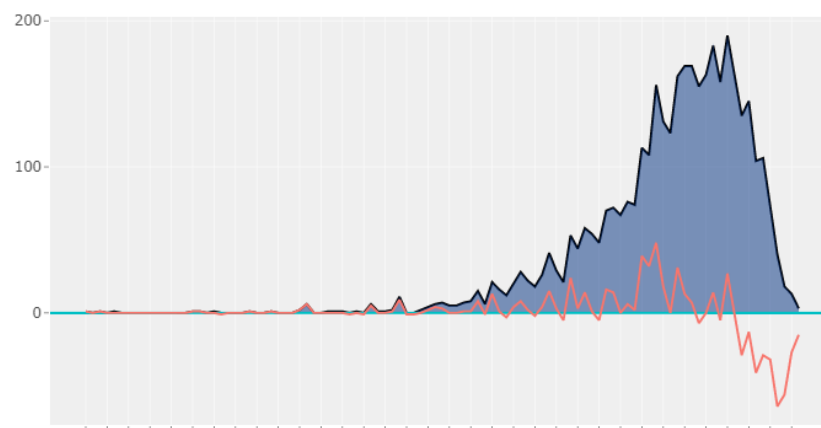


Figure 5. Reference Publication Year Spectroscopy (RPYS). Legend: Blue—cited references per year; Orange—deviation 5-year median. Own elaboration; source: R Studio biblioshiny; software: R Studio biblioshiny.

#### 4.6. Keywords

The 63 articles were indexed with 241 author keywords and 266 KeyWords Plus terms by WoS. KeyWords Plus terms prove to be more valuable than author keywords for bibliometric mapping but are less deductive in the content analysis [83].

Figure 6 presents the WordCloud of the top 40 author keywords. Service climate field directions are perceptible through the keywords [A7] used by authors to index scientific literature and the repetition with which they co-occur with other articles, sources, and authors. The author keywords service climate, service, performance, and hospitality have the highest co-occurrences and connections with other keywords. As we can see, performance is the most critical and current trend (Figure 18).



**Figure 6.** WordCloud: Authors' Keywords. Legend: Top-40 Authors' Keywords; own elaboration; source: R Studio biblioshiny; software: R Studio biblioshiny.

For the analysis of the main KeyWords Plus terms, one TreeMap (Figure 7) was created, with the 40 most used words, which was useful for quickly understanding the critical terms and comparing their different origins. Over the years, the shape of the curve of KeyWord Plus accumulated growth shows performance influence, followed by keywords related to antecedents, perceptions, service climate, and job satisfaction (Figure 10). These data results confirm recent scientific production, such as culture as an antecedent of service climate [61], job satisfaction, and organizational commitment [84], and service climate and empowerment for customer service quality [85].

#### 4.7. Structures

The bibliometric analysis, aiming to develop a complete image of three conceptual, social, and intellectual structures of knowledge, focused on science mapping and network visualization.

##### 4.7.1. Conceptual

The conceptual identifies the main themes in hospitality to map relationships between concepts and explores the different trends developed [23,86]. To visualize and map this structure, two methods were used: factor analysis and a co-occurrence network. In each method, keywords assigned by the authors and encoding of KeyWords Plus terms used by the WoS [87] were analyzed.

In the topic dendrogram (Figure 8), the four clusters of author keywords may be visualized, each one being represented in a different color. These clusters mean that most articles index these keywords together. A factor analysis of the top 40 most representative

author keywords was carried out, and the Multiple Correspondence Analysis (MCA) technique was used to reduce the respective dimensions.

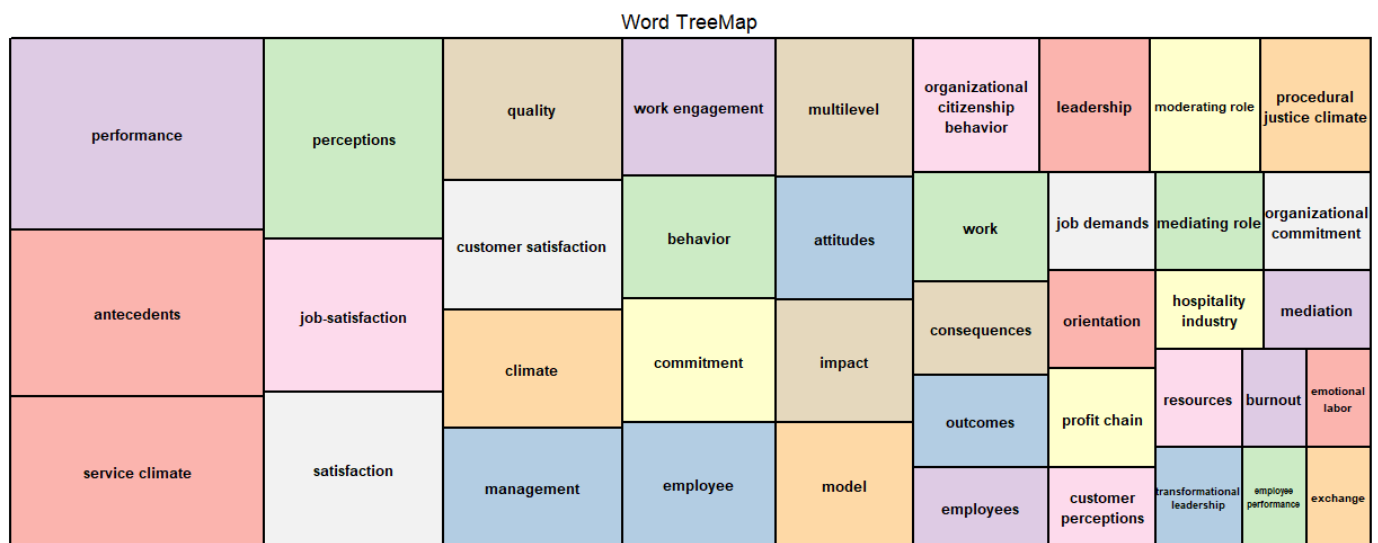


Figure 7. Word TreeMap: Keywords-Plus. Legend: Top-40 Keywords-plus; own elaboration; source: R Studio biblioshiny; software: R Studio biblioshiny.

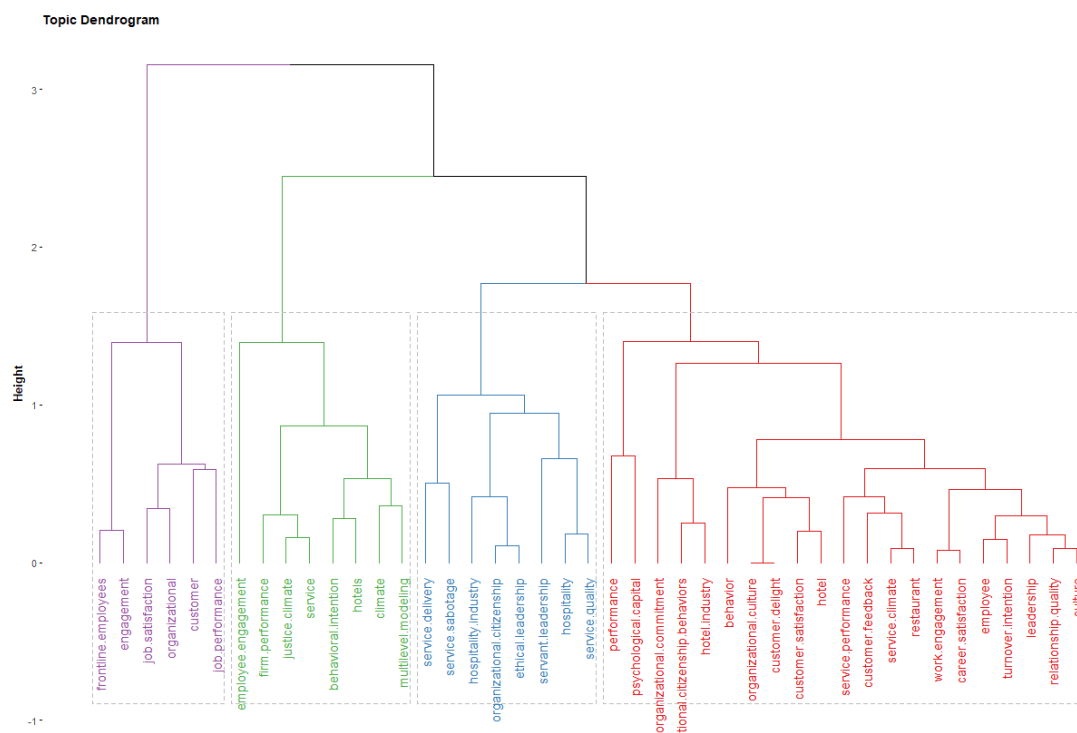
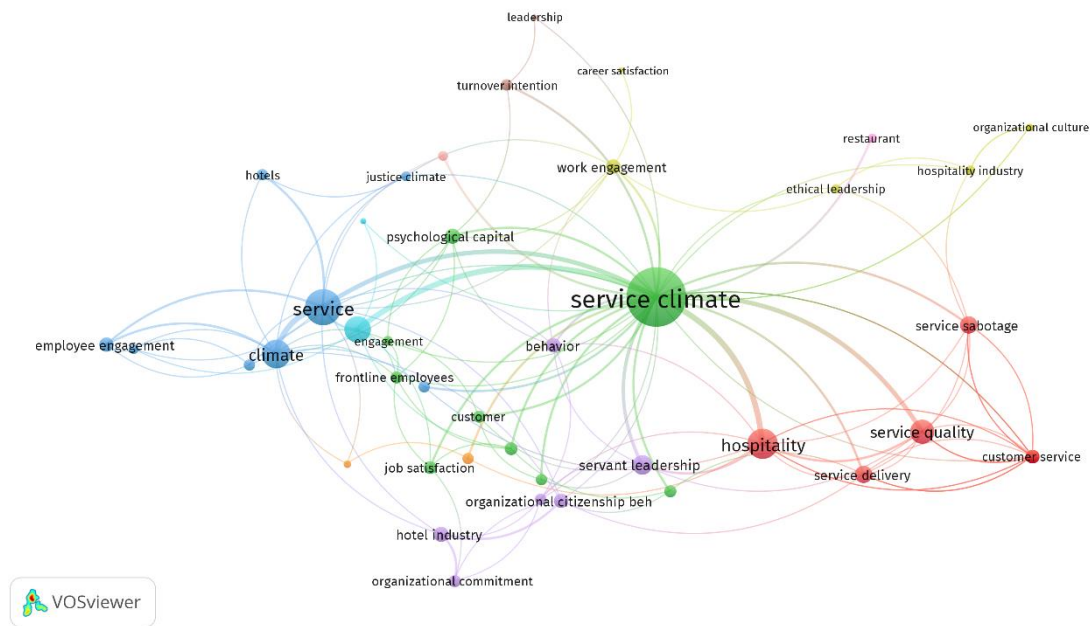


Figure 8. Topic Dendrogram: Authors' Keywords. Legend: own elaboration; software: R Studio biblioshiny.

The proximity between keywords corresponds to shared substance. Service climate is close to work engagement because a significant number of articles treat them together. On the other hand, customers and culture are distant because only a tiny fraction of articles treat them together.

The co-occurrence network by author keyword (Figure 9) shows the 36 strongest keywords of the largest 215 connected-items set. Twenty-six keywords in this network are not connected. It is essential to observe that the keyword service climate is associated with leadership, motivation, perceptions, and performance. Author keywords such as service

quality, work engagement, hospitality, organizational citizenship behaviors, and customer satisfaction have a close relationship, and some of them coexist in the same articles.



**Figure 9.** Co-occurrence Network: Authors' Keywords. Legend: own elaboration; software: VOSviewer.

By applying a clustering algorithm to the KeyWords Plus network, it is possible to identify some highlighted thematics, represented in a four-dimensional plot with two axes: centrality can be interpreted as the influence of the theme and density as a measure of theme developments [88]. Through the analysis of the 266 KeyWords Plus terms, we developed one thematic map (Figure 10). Naturally, the motor theme is the service climate. This motor theme cluster aggregates KeyWords Plus terms, such as mediating role, moderating role, and work engagement. The basic, transversal, and most important themes are related to performance and customer satisfaction. The performance cluster is related to customer perceptions, and customer satisfaction is related to attitudes, commitment, and profit chain. The most developed theme is leadership, which is related to the theme antecedents. The others are isolated themes.

In the co-occurrence network of KeyWords Plus terms, some of the 266 KeyWords Plus terms are not connected. The largest set consists of 255 connected items. The 35 strongest items were selected and grouped into six clusters. The mapping of KeyWords Plus terms (Figure 11), although different, corroborates the central relationships of these words and shows the conceptual structure based on four powerful terms: service climate, performance, perceptions, and satisfaction.

#### 4.7.2. Intellectual

The analysis of the intellectual structure of knowledge in the form of a co-quotation network is the most common in bibliometrics. Two documents are said to be co-cited when both are mentioned in other publications and reveal relationships with the bibliographic references. The 63 articles included in this study mentioned 3343 references. In Figure 12, the 115 bibliographic strongest references, four clusters, and 4457 links between them are shown. The impact and influence of different authors on the scientific community was estimated.

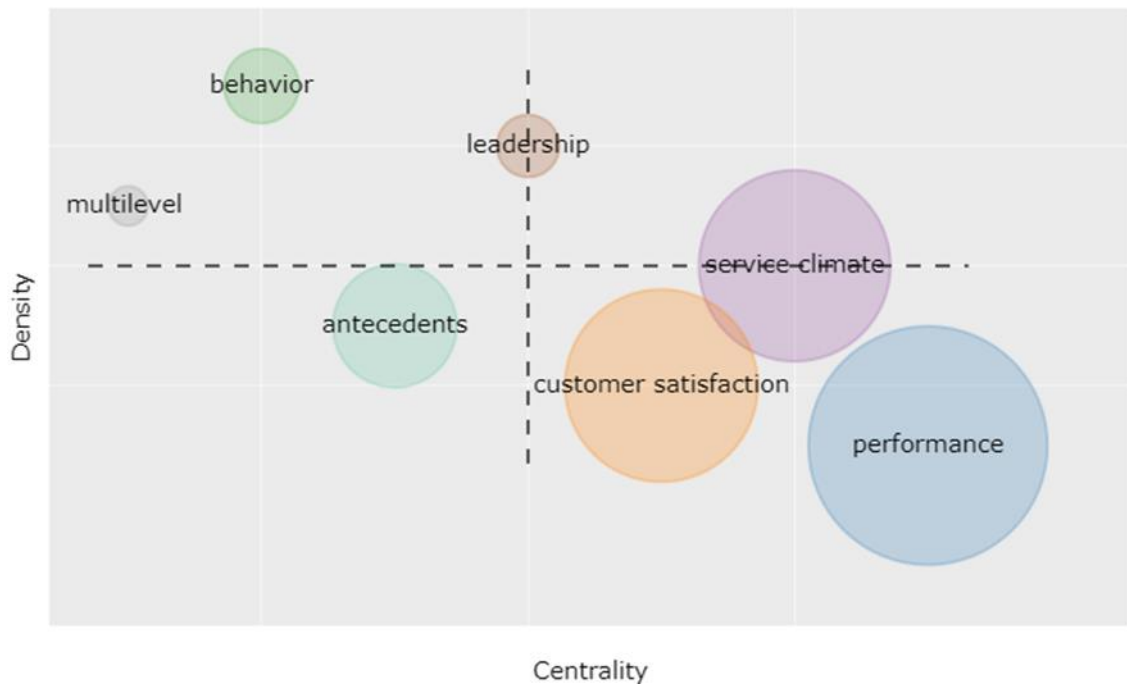


Figure 10. Thematic Map: KeyWords Plus. Legend: own elaboration; software: R Studio biblioshiny.

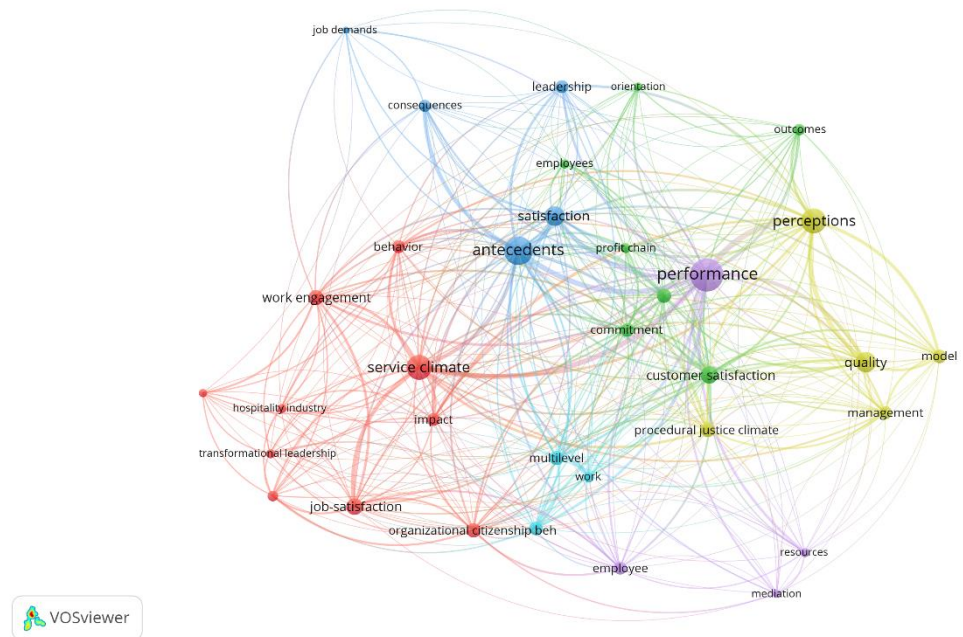
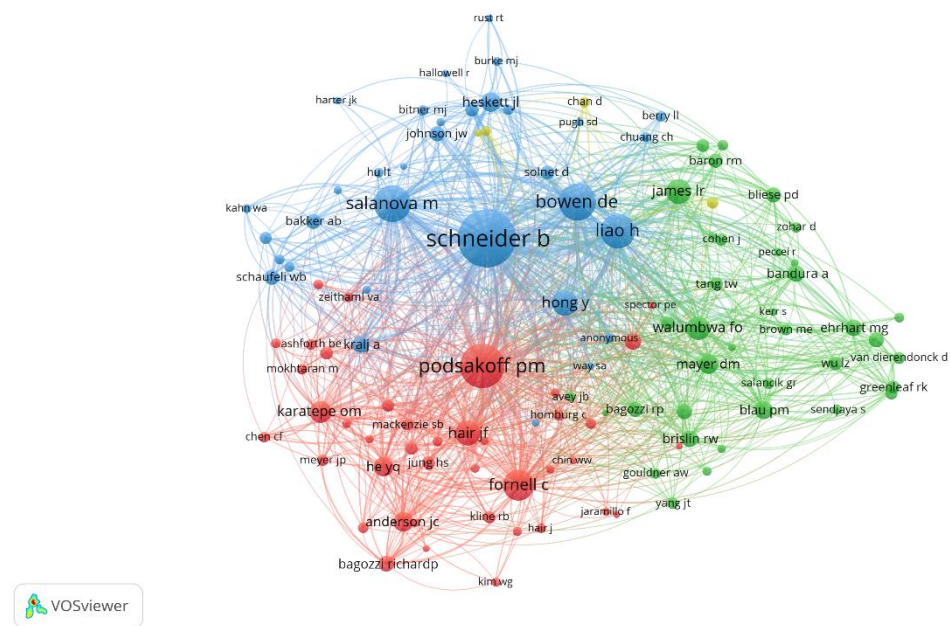


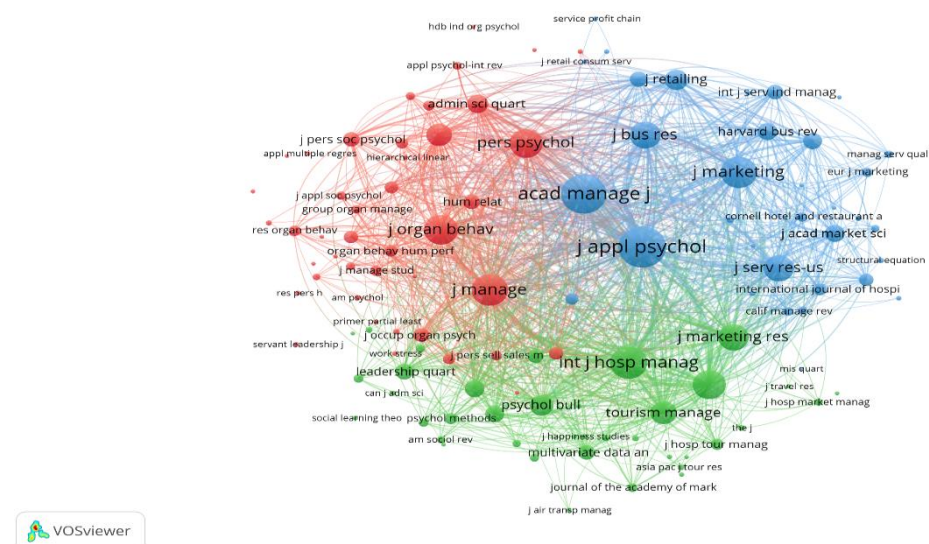
Figure 11. Co-occurrence Network: KeyWords Plus. Legend: own elaboration; software: VOSviewer.





**Figure 12.** Co-quotation Network: Authors. Legend: own elaboration; software: VOSviewer.

In Figure 13, the network of co-quotation analyses by journals that published the 3343 bibliographic references can be visualized. There are three clusters, in different colors, where the most important 115 sources are visible. The journals of each of these groups are usually co-cited within them. The sources with the most influence are also co-cited by sources belonging to a cluster other than the one they belong to (Figure 14). The different main sources of these clusters are the *Journal of Applied Psychology*, the *International Journal of Hospitality Management*, and the *Journal of Management*.



**Figure 13.** Co-quotation Network: Sources. Legend: own elaboration; software: VOSviewer.

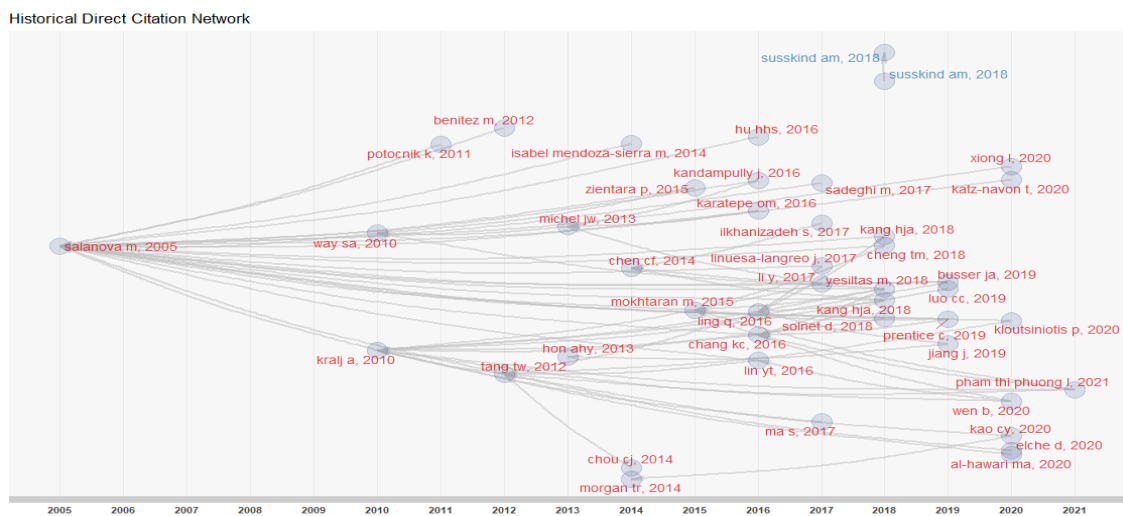


Figure 14. Historiograph. Legend: own elaboration; software: R Studio biblioshiny.

### 4.7.3. Social

Figure 15 shows the authors’ collaboration network. Of the 167 authors, the map visualizes the 74 authors with the most collaborations, grouped into 19 different colors by cluster, with 120 links. The nearest circles show researchers with close scientific literature collaboration. The largest set of connected items consists of 10 authors. The figure shows this strong collaboration between Meizhen Lin (College of Tourism, Huaqiao University), Qian Ling (School of Tourism Management, South China Normal University), Xiaoyi Wu (School of Management, Xiamen University), Biyan Wen (School of Management, Jinan University), and Sinian Zhou (School of Management, Jinan University), co-authors of the articles: “Role Stress and Turnover Intention of Frontline Hotel Employees: The Roles of Burnout and Service Climate” [89], “How and When the Effect of Ethical Leadership Occurs? A Multilevel Analysis in the Chinese Hospitality Industry” [90], and “The Trickle-Down Effect of Servant Leadership on Frontline Employee Service Behaviours and Performance: A Multilevel Study of Chinese Hotels” [91].

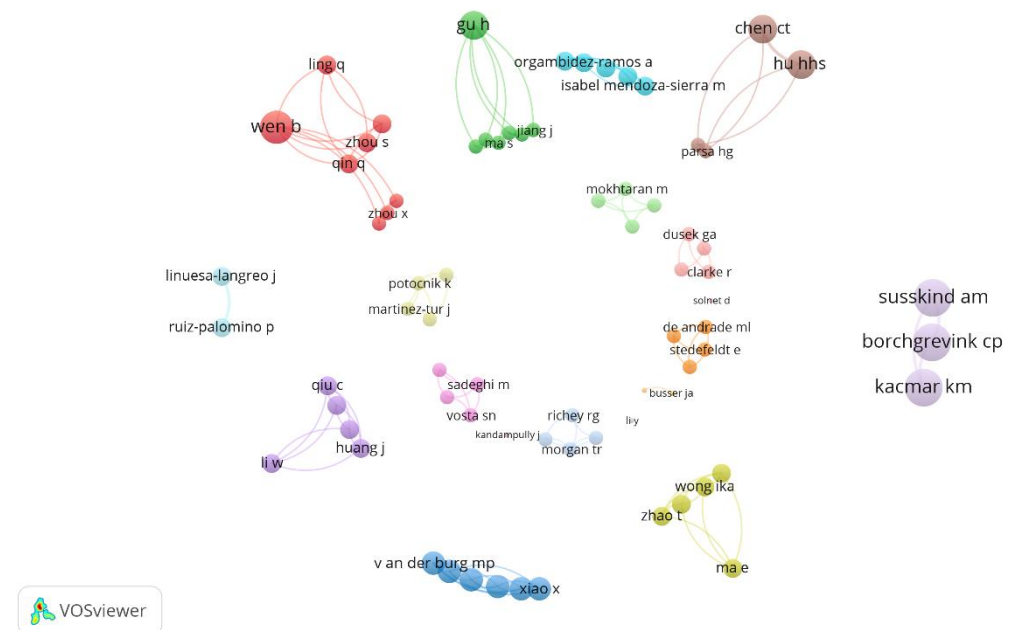
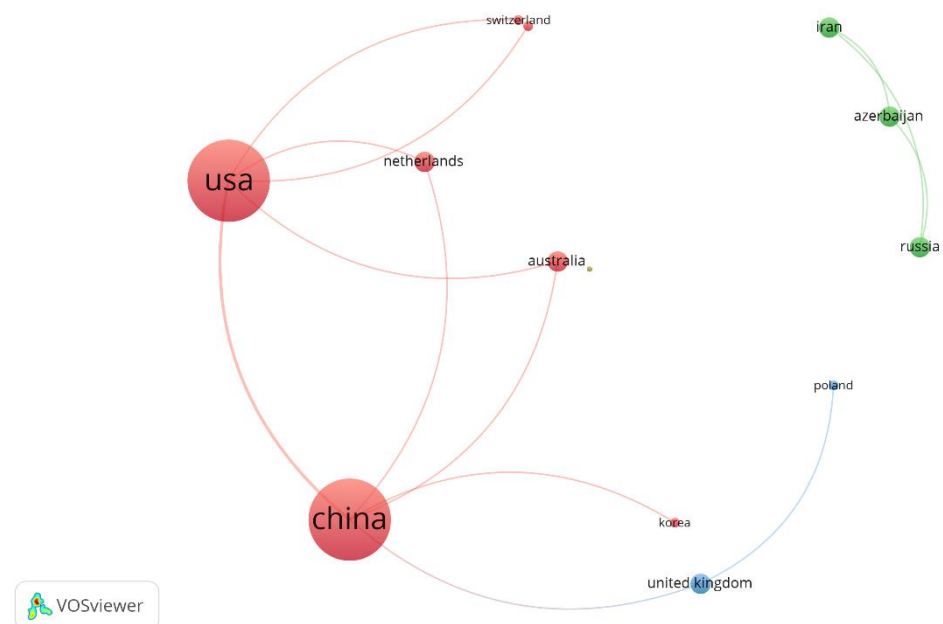


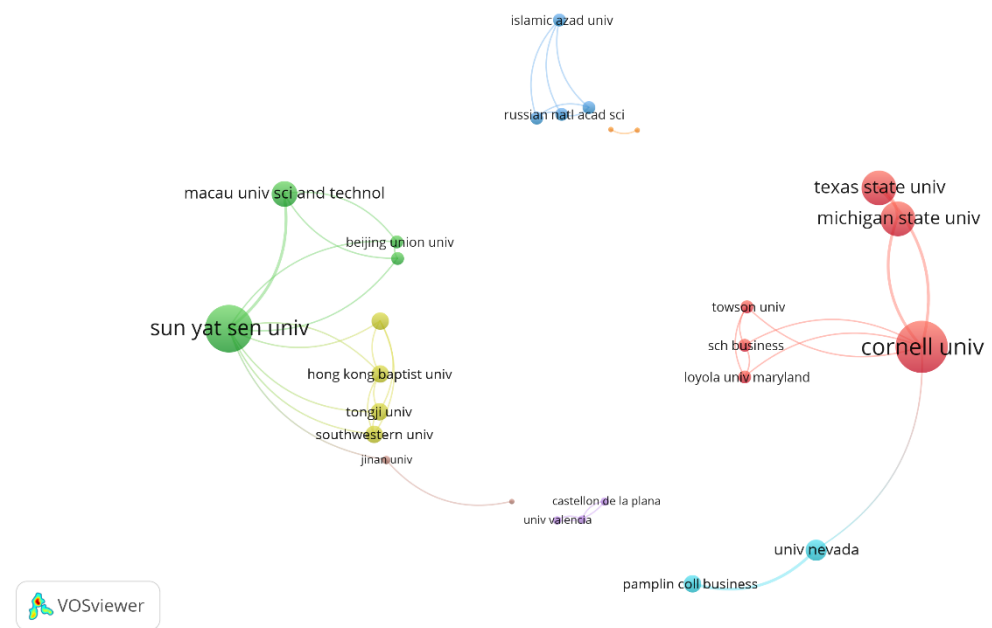
Figure 15. Collaboration Network: Authors. Legend: own elaboration; software: VOS viewer.

The file of countries is ordered based on the quantity of the co-authored scientific literature. The thickness of the connection line between two countries indicates the strength of the collaboration. Some of the 17 countries in our network are not connected. The most extensive group of linked countries include nine countries, in two clusters with 10 links (Figure 16). Upon analyzing the country, it was visible that China and the USA are the countries with more impact (China has 33.3% and the USA 23.8%). Switzerland has 122 quotations per article, higher than China (28.3) and very close to Spain (168.3). The collaboration network [A5] reflects a dominance of the USA, which collaborates with different countries, such as Switzerland and India, and reveals China's important international collaboration function with the United Kingdom, the Netherlands, and Australia. A relationship is visible between Iran, Azerbaijan, and Russia, which is linked to an article by Sadeghi, Zandieh, Mohammadi, Yaghoubibijarboneh and Vosta [33]. One of the limitations of the present analysis is that the populations of the different countries were not compared. If this had been done, the results would have been different.



**Figure 16.** Collaboration Network: Countries. Legend: own elaboration; software: VOS viewer.

The most relevant institutions [O4] are Cornell University (USA) with seven articles, and Islamic Azad University (Iran), Jinan University (China), University of Castilla-la Mancha (Spain), and the University of Queensland (Australia) with six articles, corroborating the results of the countries. A group of three institutions with five articles follows: the National Chiayi University (Taiwan), the Sun Yat-sen University (China), and the University of Nevada (USA). Some of the 108 institutions in this network are not connected. The most extensive set of linked institutions consists of 15 institutions in three clusters with 26 links (Figure 16). The relationship between Cornell University (USA), Michigan State University (USA), and Texas State University (USA) is associated with Susskind et al. (2018a; 2018b). Michel, Kavanagh and Tracey [31] are linked to Loyola University Maryland (USA), Towson University (USA), the Sellinger School of Business and Management (USA), and Cornell University (USA). In another cluster, the most collaborative institution is the Sun Yat-sen University (China). Prentice et al. [92] are linked to the Griffith University (Australia), and Wong, Ma, Chan, Huang and Zhao [84] to the Macau University of Science and Technology (China), the Beijing Union University (China), and the City University of Macau (China) (Figure 17).



**Figure 17.** Collaboration Network: Institutions. Legend: own elaboration; software: VOSviewer.

#### 4.8. Content Analysis

In total, the studies represented 3519 customers and 23,068 employees. The employees include 381 directors, 1402 managers, 1331 supervisors, and 19,954 employees, of which 15,793 are from hotels, 2338 from restaurants, 1236 from casinos, and 587 from the aviation. The sample in each study varied between 10 and 1869. All studies included women and men. The studies were carried out mainly in Asia (57%), with some predominance in Europe (20%) and North America (20%) and the remainder in Australia (3%). More precisely, the most represented populations on each continent were Chinese, American, and Spanish. Some samples from less well represented populations such as Russia [48], Iran [93], Greece [46], and Turkey [45] were found. There were two qualitative studies [94,95] and one mixed study [61]; the rest were quantitative studies, of which 48% were based on a multilevel approach. Of these, three were paired dyads [56,96,97] one was time-lagged [98], and the remainder were cross-sectional.

Of the 63 articles analyzed, 29 (46%) mention the use of an instrument from Schneider, White, and Paul (1998); out of these, 25 articles (86%) refer to the use of the generic measure GSCS (Global Service Climate Scale) and four articles (14%) state measurements through four dimensions. Of the 25 articles that mention the GSCS, 11 articles state the original seven-item version and nine the reduced four-item version, and eight with their origin in versions translated and validated into Spanish by Moliner et al. [99], Salanova, Agut and Peiro [34], and Carrasco et al. [100].

Four articles mentioned the development of a specifically designed instrument [31,32,48,101]. Susskind, Kacmar and Borchgrevink [39], developed an instrument with four dimensions and 16 items used in later works [35,38]. Solnet, Ford and McLennan [36], used a measure adapted from Schneider, White and Paul [13], and He, Li and Lai [32], used a measure made up of three dimensions with 14 items. There were four identified articles [33,93,102,103] that mentioned the instrument by He, Li and Lai [32]. The instrument by Hallowell et al. [104] with only one dimension, was used by Wong et al. [105] and Prentice, Ma and Wong [92]. Kelley's instrument (1992) with also one dimension, was used by Cheng et al. [106], and Chen and Kao [107].

In the present search, 47% of the articles studied service climate as an antecedent. The results showed that service climate is critical for elevating employee engagement [103], influencing employee empowerment and organizational citizenship behavior to improve customer service quality [85], customers' perceived service value, and behavioral intention [93]. It has a strong relationship with the psychological capital and the quality of work–life [102] as well as it reduces the negative effect of customer involvement [108]. Ac-

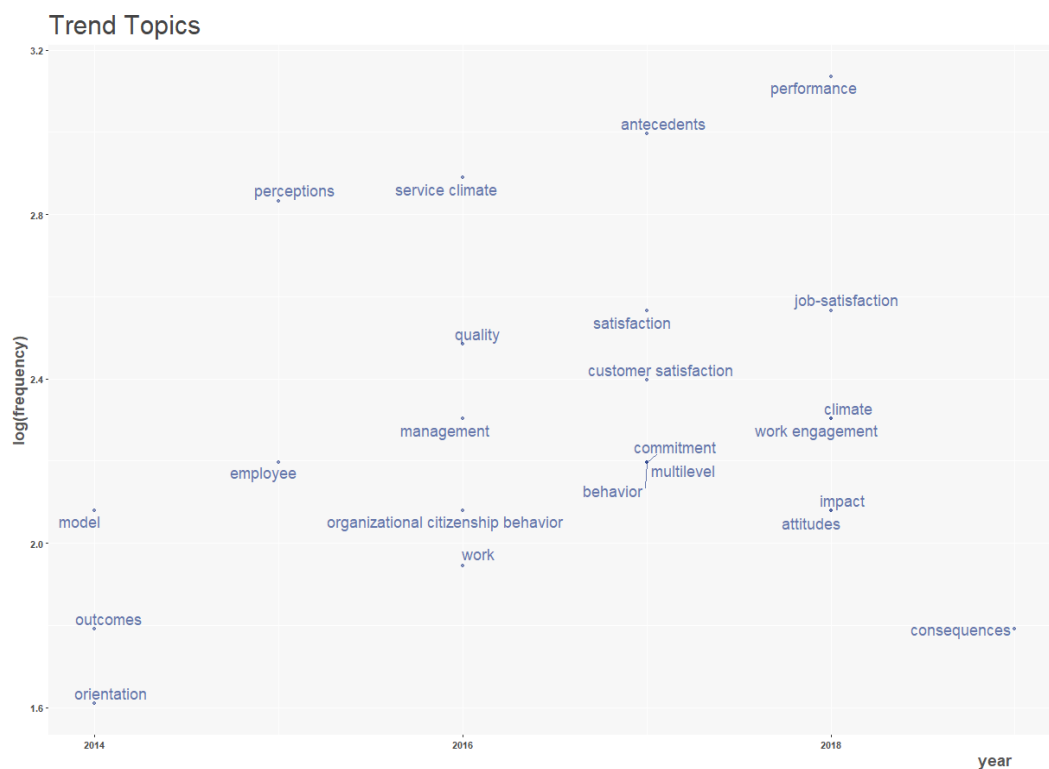
According to Sadeghi, Zandieh, Mohammadi, Yaghoubibijarboneh and Vosta [33], the service climate plays an important role in the hotel experience and makes an outstanding contribution to predicting satisfaction, trust, and revisiting intention (behavioral intentions). The models most frequently used to explain the linkages between service climate and financial performance, as they work through employee interactions with customers, are the Guest-Server Exchange model [35,38,39] and the Service Profit Chain [36]. Chang [109] studied the service climate as a mediator and a moderator. A total of 24% of the articles were identified with service climate as a mediator, 22% as a moderator, and only 7% as a consequent. As a mediator, service climate links HRM practices with work engagement [46,72] and links supervisor servant leadership with service-oriented OCB [43,44]. As a moderator, the findings showed that work engagement is the mediator between psychological capital and service behavior, and the mediating effect of work engagement changes with the service climate [106]. The service climate moderates the influence of role stress on burnout [89] and the effect on service-oriented behaviors [91]. At least, culture is an antecedent of the service climate. The results showed that culture interacts with other elements, controls them, and positively impacts the service climate [61,110].

## 5. Conclusions and Implications

The theoretical contribution of this review is to identify the existing research on the service climate and provide initial criteria for developing a service climate framework as a sustainable competitive advantage in hospitality. It is useful to the scientific community, scientific journal editors, directors, and HR managers to perceive the current scientific developments, recognize influential articles, and identify the most influential journals in this field as well as potential international collaborators. It reviews and sums up the scientific literature, characterizes trends and identifies future field directions, and collects data about service climate antecedents, consequences, mediators, and moderators in hospitality. The results are a basis for future research.

This article presents a practical and innovative implication for researchers, lecturers, academics, and professionals. It identifies a new field of research in the service climate. Until now, the service climate has been described under the employees' general perception of the organizational requirements, rewards, work support policies and procedures, as well as service behaviors. However, a new ramification of the service climate has been identified under the perception of the customer. This new trend is essential because technology is changing the way customers relate to hotels, particularly to service delivery: there is an increase in customers' interactions with the hotel by means of self-service technologies delivery. In hotels with hybrid service delivery models, human interaction service and self-service technologies [94], employees and customers co-create the service experience—the customer acts as a co-creator of value and as a service provider [111]. This entire process is influenced by the employees' perceptions of the service climate and by the positive perceptions of customers [35,38]. Such customer perspective leads to positive service results, such as perceived quality and experiences [112].

A bibliometric (Bibliometrix) and network (VOSviewer) analysis were conducted in order to review the literature of 63 hospitality service climate articles published between 2005 and 2021, covering 167 authors, 30 journals, 17 countries, and indexed with 241 authors' keywords. The *International Journal of Contemporary Hospitality Management* presents the most considerable accumulated growth of the hospitality service climate articles. The content analysis showed a total sample with 3519 customers and 23,068 employees, and all include women and men. The studies were carried out mainly in Asia. The article that has received the highest number of quotations is "Linking Organizational Resources and Work Engagement to Employee Performance and Customer Loyalty: The Mediation of Service Climate" [34], with a total of 975 quotations and an average of 57.35 quotations per year. The USA and China are the countries with the highest number of collaborative publications. With a growth rate of 5.95%, keywords such as service climate, performance, antecedents, and perceptions are closely related (Figure 18).



**Figure 18.** Trend Topics. Legend: own elaboration; software: R Studio biblioshiny.

The new Industrial Revolution 4.0, technology, big data, and HR analytics are crucial for competitiveness in this field. For scholars of these recent sub-field domains, hybrid models (people–technology) are vital and extremely important to help hospitality businesses succeed. In hotels, decision-making processes tend to be increasingly supported by algorithms and databases. The possibility of integrating financial performance data (revenue or profit) with workforce data allows the alignment of the investment in HRM practices with the hotel’s results. Big data, the speed of transactions, individual and personalized content, and workforce analytics are examples for using new technologies and taking advantage of unused capacity. Hotels must develop new management skills, increase their competitive advantages, transform themselves into learning organizations, and apply new management models, allowing space for employees to make decisions and seize opportunities. To sum up, the service climate is a reality in hospitality and must be developed and supported to provide a sustainable competitive advantage.

## 6. Limitations

This study should be read in the light of some limitations namely in what concerns the chosen methodology: to obtain the bibliographic data, the only database used was the WoS database. The use of other databases, such as Scopus, might have brought up further publications and broadened the sample to be analyzed.

In addition, articles in English, that were peer-reviewed were included while systematic literature reviews, early access publications, proceedings papers, and articles unrelated to hospitality and tourism were excluded. If eligible criteria were changed, the results would be different.

Thirdly, the geographical dispersion of articles was made without the weight of countries’ populations. If this had been done, the results would, most probably, be different.

Finally, the data were analyzed without any manual editing. Had this been performed, some differences might arise since some authors may use different initials, sign under different names, or have more than one name.

## 7. Future Research

Service climate promotes employee motivation and positive behaviors, affecting customer's experiences and perceptions, such as service quality and satisfaction. A more thorough review on the service climate may be obtained by expanding the adopted criteria or the indexed databases. It is essential to extend the search criteria to include the service climate in terms of the customers' perspectives.

Literature predominantly measures employee perceptions of the service climate and is developed specifically for hotels with human interaction service delivery. Further research may lead to a qualitative study to discuss the future of a sustainable service climate and identify and prioritize the principles to assess the criteria to take a more specific perspective, such as self-service technologies' delivery.

Research on the service climate as a link between recent digital transformation trends, blockchain, HR analytics, technologies, and financial performance (revenue or profit) should be promoted and stimulated for an in-depth understanding and thus to find new competitive advantages.

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