

HUGO MANUEL TABORDA PALÁCIOS DA SILVA

**CONSTRUCTION AND VALIDATION OF THE
SERVICE CLIMATE SCALE FOR HYBRID SERVICE DELIVERY MODELS
IN THE HOSPITALITY INDUSTRY**



**UNIVERSITY OF THE ALGARVE
FACULTY OF ECONOMICS
FARO 2022**

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IN THE HOSPITALITY INDUSTRY**

PhD In Economic and Management Sciences

Work carried out under the guidance of:

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Statement of Work Authorship

I declare to be the author of this work, which is unique and unprecedented. Authors and works consulted are properly cited in the text and are included in the listing of references included.

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DEDICATION

*“...Every perfume starts with one ingredient.
But it is the last one that makes it come to life.”*

In Tomorrowland, 2016

dedicated to my son.

*Meu querido filho,
hoje, com estas palavras, quero eternizar este momento.
À noite, antes de dormires, quero que olhes para o céu,
e mesmo que esteja nublado, procura ver as estrelas.
Se procurares bem, de todas elas, vais descobrir uma que é diferente.
É tua! Somente a tua.
Essa estrela tem todo o meu amor por ti,
fonte inesgotável, infinita e eterna!
Se um dia te sentires perdido, sem rumo, sem chão,
com duvidas, problemas e sem saberes o que fazer,
lembra-te dela.
Ela te dirá para seguires, sempre, os teus sonhos,
escolheres, sempre, o que te faz feliz,
e procurares, sempre, quem te ama verdadeiramente.
Eu, jamais, desistirei de ti e,
mesmo que possa estar muito longe, num outro Mundo,
com muitas saudades tuas, do teu sorriso,
estarei, sempre, ao teu lado e no teu coração.
Acredita em ti como eu sempre acreditei... conseguirás tudo.
Daquele que te amará eternamente, onde quer que esteja,
o teu Pai.*

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ABSTRACT

Service climate scales are oriented predominantly to measure employee perceptions toward hotels with human interaction service delivery. The thesis aims to develop and validate a scale to measure service climate in hotels with hybrid service delivery models. Comprises three systematic literature reviews, with bibliometric (Bibliometrix) and network (VOSviewer) analysis, one eDelphi research to develop the scale via an international expert panel, and two quantitative studies to instrument reliability and validity. Our systematic literature reviews are the first to utilize bibliometric analysis and knowledge network analysis structures to assess service climate construct as a sustainable competitive advantage in the hospitality field. This thesis presents a new instrument to measure the People-Technology Hybrid Service Climate Scale (P-THSCS). P-THSCS has an original, innovative, and compact perspective. It measures the perceptions of people (employees and customers) in hybrid service deliveries (Human Interaction Service and Self-Service Technologies) with one English version of 31 items grouped into five dimensions: Co-Creation, Standards, Support, Characteristics, and Global Service Climate. The co-creation dimension shows the most significant predictive value overall.

KEYWORDS: *Service Climate; Scale development; Hybrid service delivery; Hospitality; eDelphi technique.*

RESUMO

Ao longo dos últimos anos, o Fórum Económico Mundial tem vindo a alertar que um dos principais riscos para o futuro das sociedades é a deterioração do emprego. Um dos objetivos de desenvolvimento sustentável, o ODS8 – estabelece como foco o trabalho digno e o crescimento económico como um meio para atingir a sustentabilidade e a competitividade. No sector da hotelaria, os gestores estão focados em encontrar soluções que conduzam ao aumento da competitividade e a sustentabilidade dos seus hotéis. Neste sentido, algumas decisões sobre o tipo da entrega de serviço são fundamentais para o futuro dos mesmos. Tradicionalmente, as entregas de serviço eram operacionalizadas através da interação com os empregados de contato. Cada vez mais, com a introdução das tecnologias, a entrega híbrida de serviços é uma opção estratégica e essencial para inovação, sustentabilidade e competitividade, uma vez que os recursos combinados de pessoas (incluindo empregados e clientes) e tecnologia cocriam a experiência do serviço.

Na área da hospitalidade, a literatura que explora estes modelos híbridos com os dois tipos de entrega de serviço é escassa e dispersa. Desta forma, os gestores hoteleiros continuam a manter uma postura cautelosa, com muitas dúvidas e alguns receios, para implementar integralmente esta nova tendência, sem que, antes, haja uma compreensão clara do impacto da adoção das mesmas. Como tal, é necessário desenvolver e validar novos instrumentos de medição que potenciem a recolha de dados sobre as variáveis mais críticas da hotelaria, nomeadamente, as experiências das pessoas e o desempenho financeiro. O clima de serviço é uma dessas variáveis.

O clima de serviço é uma vantagem competitiva potencial e sustentável do ponto de vista da gestão devido à sua inimitabilidade. Um ativo intangível único, impossível de replicar, que relaciona os empregados, as experiências do cliente e, conseqüentemente, o desempenho financeiro.

Embora na literatura o clima de serviço seja um construto inicialmente relacionado com as perceções do empregado e as respetivas escalas orientadas predominantemente para medir essas perceções em hotéis com entrega através de interação humana, atualmente, o clima de serviço percecionado pelo cliente tem ganho alguma dimensão. Assim sendo, uma medida das perceções das pessoas (empregados e clientes) em entregas de serviços híbridas (serviço de interação humana e tecnologias de auto-atendimento) pode ser uma ferramenta relevante.

Neste contexto, o objetivo principal da tese é desenvolver e validar um novo instrumento, original, inovador e compacto, para medir o clima de serviço em hotéis com entregas de serviço híbridas em que pessoas (empregados e clientes) cocriam a experiência de serviço através da tecnologia.

A metodologia da tese tem por base 3 etapas. Na primeira etapa, pesquisamos conceitos, definições, dimensões e subdimensões e itens através de 3 estudos qualitativos (revisões sistemáticas da literatura). Os resultados permitiram desenvolver uma estrutura de pesquisa preliminar para a escala de Clima de Serviço Híbrido Pessoas-Tecnologia (P-THSC). Na segunda etapa, elaboramos um trabalho de pesquisa qualitativa com base na técnica Delphi (com três rondas), com análise de conteúdo, para construir a redação final do instrumento e validar o conteúdo por consenso entre os especialistas. Utilizamos o método Delphi modificado, não aplicando o questionário aberto inicial, e estabelecemos as dimensões, subdimensões e itens iniciais com base nas revisões sistemáticas da literatura realizadas. As três rondas com um painel de 21 especialistas foram realizadas em ambiente virtual [online], através do software eDelphi.org, nas datas [21/dez/22/jan], [22/fev/22/mar] e [22/mar/22/abr]. Na última etapa, validamos o instrumento através de Análise de Componentes Principais, Análise Fatorial Exploratória e Análise Fatorial Confirmatória para validar a respectiva estrutura fatorial.

Entre 2019 e 2022, foram realizados 6 trabalhos de investigação, compilados em quatro artigos para publicação em revistas científicas especializadas. Desta forma, a tese compreende três revisões sistemáticas da literatura, com análise bibliométrica (Bibliometrix) e de rede (VOSviewer), que deram origem a três artigos. O artigo "Mapping service quality and service climate for sustainable strategy in the business to the consumer hospitality and tourism industry" com o objetivo específico de identificar e resumir a literatura existente sobre a conexão entre clima de serviço e construtos experiências do cliente, nomeadamente a qualidade de serviço. O Segundo artigo "A bibliometric analysis of trust in the field of hospitality and tourism" surge da necessidade de incluir a confiança como dimensão ou sub-dimensão do clima de serviço. Por último, o artigo "A bibliometric analysis of service climate as a sustainable competitive advantage in hospitality" que contribuiu para a conceção da estrutura do clima de serviço híbrido de pessoas-tecnologia. Compreende ainda, uma pesquisa eDelphi para desenvolver a escala através de um painel internacional de especialistas e dois estudos quantitativos para a confiabilidade e validade do instrumento. Estes três trabalhos de investigação deram

origem ao artigo "Developing a people-technology hybrid scale to measure service climate in hospitality", que divulga à comunidade científica e hoteleira um novo instrumento (P-THSCS) com uma versão em inglês de 31 itens, agrupados em cinco dimensões: Cocriação, Padrões, Suporte, Características e Clima de Serviço Global, em que a dimensão de cocriação mostra o valor preditivo mais significativo.

A tese apresenta uma componente inovadora muito forte de onde se destaca duas originalidades. As revisões sistemáticas da literatura foram as primeiras a utilizar análises bibliométricas e estruturas de análise de rede de conhecimento para avaliar a construção do clima de serviço como uma vantagem competitiva sustentável. A outra é o facto de desenvolver um novo instrumento (People-Technology Hybrid Service Climate Scale) que abre uma nova agenda científica para pesquisas futuras com base na estrutura do clima de serviço, e fornece à hotelaria um novo instrumento para a obtenção de novos dados.

Apesar do protocolo com o grupo hoteleiro Vila Galé para a colaboração na recolha de respostas para os trabalhos quantitativos, a taxa de respostas validadas é a maior das limitações encontradas. Ainda assim, os resultados mostram uma ferramenta de gestão relevante, que faculta dados essenciais para a gestão de recursos humanos, para a gestão comercial, “revenue management”, marketing, e gestão financeira. Ao nível académico esta tese abre as portas a toda uma nova agenda científica.

Palavras-Chave: *Clima de serviço; Desenvolvimento de escala; Entrega de serviço híbrida; Hospitalidade; Método eDelphi.*

CHAPTER 1 – GENERAL INTRODUCTION

1.1. Context and scope

Hospitality management is increasingly focused on finding solutions to increase its competitiveness and sustainability. Some hotels are looking to the future where the strategic vision is a solution that combines models with hybrid service delivery. Traditionally service deliveries were operationalized through interaction with the contact employee. With the introduction of self-service technologies (SSTs), hotels, especially urban ones, are starting to see a more sustainable opportunity, adapting their physical facilities and technological infrastructure to these models. Kandampully, Bilgihan, and Zhang (2016) studied these changes in hotel management to understand how the combined resources of people (employees and customers) and technology are essential for innovation, sustainability, and competitiveness. This combination of people and technology for hospitality organizations represents a hybrid that gives the hotel a unique ability to leverage internal and external resources. To Kandampully et al. (2016), in hotels with hybrid service delivery models (Human Interaction Service Delivery and Self-Service Technology), people (employees and customers) co-create the service experience.

However, the literature exploring these models with the two types of service deliveries is scarce in the hospitality field. Thus, hotel managers maintain a cautious posture, with many doubts and some fears, to adopt this new service delivery trend without a clear understanding of the impact. As such, it is necessary to develop and validate new measurement instruments that enhance data collection on the most critical variables in hospitality, namely, people's experiences and financial performance.

Service climate is one of these variables. According to Bowen and Schneider (2014), it is a unique intangible asset related to customer experiences and financial performance. Bowen and Schneider (2014) discuss the service climate as a basis of sustainable competitive advantage and the customer's role in co-creating service climates as the social context for value co-creation.

In this context, developing and validating a new instrument to measure the service climate in hotels with hybrid service deliveries in which people (employees and

customers) co-create the service experience through technology opens a new future research agenda based on service climate framework, as well as providing hotels with a new instrument for obtaining new data.

1.2. Purpose of the thesis

Six research works will be conducted through four studies, each directed towards its specific objectives, with the primary thesis purpose of developing and validating a scale to measure service climate in hotels with hybrid service delivery models.

To achieve four general objectives were defined, one for each of the studies, namely: 1) To revise and summarize the guiding theory and existing literature on service climate's antecedents and consequences linkages and discuss the future of service climate as a sustainable competitive advantage in hospitality; 2) To reflect on the role of trust in the conceptualization of the people-technology hybrid service climate; 3) To contribute to the conceptualization of the people-technology hybrid service climate to establish the initial framework by discussing its theoretical underpinnings; 4) Develop and validate a scale to measure the people-technology hybrid service climate. We present the studies and their specific objectives.

The conceptual **Study 1**, "Mapping service quality and service climate for sustainable strategy in the business to the consumer hospitality and tourism industry" seeks to achieve the specific goal of revising and summarizing the guiding theory and existing literature on service climate. The current paper systematically reviews and visually maps the connection between service climate and service quality constructs for sustainable strategy definition in the hospitality context.

The conceptual **Study 2**, entitled "A bibliometric analysis of trust in the field of hospitality and tourism" explicitly reflects the role of trust. This paper will review and summarize the scientific trust production in hospitality and tourism through bibliometric techniques. The specific aims are to analyze the evolution and trend research, the origin and evolution of scientific production, the dissemination of production by sources, and the classification and analysis of the content of articles based on keywords and citations.

The conceptual **Study 3**, entitled "A bibliometric analysis of service climate as a sustainable competitive advantage in hospitality" contributes to conceptualizing the people-technology hybrid service climate. This paper aims to review and compile, with

the support of bibliometric techniques, the scientific literature in the hospitality field, specifically related to service climate. The specific aims include analyzing the evolution and trends of the research field, the origin and evolution of scientific production, the distribution of publications by source, and finally, classifying and analyzing articles' content based on keywords, citations, and instruments.

The **Study 4**, entitled "Developing a people-technology hybrid scale to measure service climate in hospitality", specifically aims to develop and validate a scale to measure the service climate in hotels with hybrid service delivery and is composed of one exploratory and two confirmative works.

1.3. Methodology

The thesis methodology consists of 3 stages (DeVellis & Thorpe, 2021; R. L. Johnson & Morgan, 2016; Netemeyer, Bearden, & Sharma, 2003). In the first stage (Table 1.I), we researched concepts, definitions, dimensions and sub-dimensions, and items through 3 qualitative studies (systematic literature reviews). The results allowed us to develop a preliminary research framework for the People-Technology Hybrid Service Climate Scale. We adopt the modified Delphi method (Murry Jr & Hammons, 1995) and establish the initial draft of the instrument, its underlying dimensions, sub-dimensions, and items based on systematic literature reviews (exploratory studies 1,2, and 3). The P-THSC scale was developed and validated through exploratory and confirmative works.

In the second stage, we prepared a qualitative research work based on the Delphi technique (with three rounds), with content analysis, to construct the instrument's final draft and validate the content through expert consensus. The traditional Delphi method assumes an initial phase with an open questionnaire to obtain individual opinions from specialists based on their knowledge and experience (Duffield, 1988). Through this feedback, specify the dimensions, sub-dimensions, and initial pool items. However, this phase tends to be very long, difficult to manage, and with a high failure rate. Based on this assumption, and to save time, increase control over the process and avoid significant conceptual and opinion differences between experts (Kuo, Cheng, Chang, & Ying, 2020), this study adopted the modified Delphi method (Murry Jr & Hammons, 1995). We replaced the initial open questionnaire and established the initial dimensions, sub-dimensions, and items based on detailed systematic literature reviews.

In the last stage, the second and third research works are quantitative, with survey methodology. The second presents Principal Component Analysis and Exploratory Factor Analysis to item screening and factor structure, and the third with Confirmatory Factor Analysis to validate the factor structure.

Table 1.I - Thesis design

Stage	Studies	Phase	Search	Methodology	Analysis	
Stage 1 - Concept, Dimension Specification and item generation: search for concepts, definitions and links.	Study 1,2 and 3	Exploratory	Conceptual Framework; Initial draft of the instrument	Qualitative: Systematic Literature Reviews	Content analysis; Bibliometric Analysis and Mapping	
Stage 2 - Construction of instrument: Search for dimensions and items.	Study 4	Research 1	Exploratory	Three rounds of pilot tests; Final draft of the instrument	Qualitative: Delphi technique (eDelphi)	Content analysis; content validity and expert validity with consensus
Stage 3 - Evaluation of measurement, scale purification, and validation		Research 2	Exploratory / Confirmative	Item screening & factor structure	Quantitative: Survey	Principal component analysis and exploratory factor analysis
		Research 3	Confirmative	Validation factor structure	Quantitative: Survey	Confirmatory factor analysis and Instrument reliability and validity

Legend: own elaboration | software: excel

1.3.1. Systematic Literature Reviews methodology

The 3 Systematic Literature Reviews are based on a strategy composed of three phases: the execution plan, data collection, and bibliometrics. The studies started with a literature search in the Web of Science (WoS) database from Clarivate Analytics. The bibliometric analysis has divided into two moments: first, descriptive statistics and bibliometric indicators, and content analysis, providing objective and measurable data to help us understand the trajectories of the scientific field, and second, scientific mapping or visualization through network tools in order to analyze the social, intellectual and conceptual structure (Aria & Cuccurullo, 2017; Cuccurullo, Aria, & Sarto, 2016). The research databases were obtained between October 2020 and May 21.

1.3.2. eDelphi methodology

This research adopted the modified Delphi method Murry Jr and Hammons (1995) and proposed to define the initial dimensions and sub-dimensions and generate the initial

items (initial pool). To develop and validate the instrument, we followed the development model of a scale of B. R. Lewis, Templeton, and Byrd (2005), replicated in 3 steps by Kuo et al. (2020). We replaced the initial open questionnaire, typical of the Delphi method, by conducting three systematic literature reviews.

After preparing the pilot questionnaire based on systematic literature reviews, we invited the first group of specialists to evaluate the initial pool's domains, sub-domains, and items and determine whether they were adequate, needed some revision, or should be deleted. This working group reviewed, analyzed, and discussed the pilot questionnaire. The questionnaires were carried out using the e-Delphi technique, and three rounds were recommended (Delbecq, Van de Ven, & Gustafson, 1975; Duffield, 1988) so that the experts reached a degree of consensus. The three rounds were carried out in a virtual environment [online], through the eDelphi.org software, on [Dec21/Jan22], [Feb22/Mar22], and [Mar22/Apr22]. Therefore, the rounds stage started with a panel of 21 specialists.

1.3.3. The purification and validation methodology

The purification and validation of the People-Technology Hybrid Service Climate Scale (P-THSC) are fundamental because eDelphi initial items are operationalized through systematic literature reviews. In this phase, we used the methodology followed by Kuo et al. (2020), which is based on the works of B. R. Lewis et al. (2005), and we performed two quantitative studies. The first study focused on scale purification using Principal Component Analysis (PCA) and Exploratory Factor Analysis (EFA). The second study used Confirmatory Factor Analysis (CFA). Following Horng, Teng, and Baum (2009), we used cross-validation with exploratory and confirmatory techniques to evaluate the reliability and validity of the questionnaire instrument.

1.3.4. Data Collection

1.3.4.1. Scale purification

At this stage, to assess the measurement properties of an instrument, we used the SurveyMonkey software to build (May 2022) the final 69-item questionnaire and created three different collectors. In the first collector, 332 questionnaires were distributed in (June 2022), of which 130 valid responses were returned (sample 1, n=130). Thus, this step collected data from different levels of people, including hotel employees (n=58) and

customers (n=72). These collector responses were obtained locally, on a tablet, or paper in the various hotels of the Portuguese Vila Galé hospitality group. In the second collector, 9712 email invitations were sent to an international list of hotel employees and customers (August 2022), of which 282 valid responses were returned (sample 2, n=282), including hotel employees (n=74) and customers (n=208). We use sample 1 to conduct the Principal Component Analysis (PCA) and sample 2 to conduct the Exploratory factorial analysis (EFA). Participants respond to 69 items on a continuous 5-point Likert scale (from strongly disagree to strongly agree) and answer some demographic questions (age, gender, and educational level).

1.3.4.2. Confirmatory factor analysis

Confirmatory Factors Analysis (CFA) was used to test the reliability and validity of the measurement model. For the cross-validation of the five-factor results from the PCA and EFA, a higher-order CFA was conducted on a new dataset using IBM AMOS 28, because this method is accordant with the assumption of a multi-dimensional people-technology hybrid service climate. For the CFA, we collected one sample of 270 international participants (hotel customers, n=170 and hotel employees, n=100), invited and managed by SurveyMonkey, who answered (October 2022) the 31-item P-THSC scale.

1.4. Thesis Structure

The thesis structure has six chapters and 3 appendix presented at the end. The first chapter introduces the research problem, the main objective of the thesis, and a brief presentation of the four studies presented, listing the principal aims of each. Finally, a summary of the entire methodological process is presented. Chapters 2, 3, 4, and 5 show the four studies. Chapter 6 is an overview of conclusions, contributions, research limitations, and guidelines for future research.

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CHAPTER 2 – STUDY 1

MAPPING SERVICE QUALITY AND SERVICE CLIMATE FOR SUSTAINABLE STRATEGY IN THE BUSINESS TO THE CONSUMER HOSPITALITY AND TOURISM INDUSTRY¹

Abstract

Purpose - This study aims to provide a systematic literature review and visually map the service quality and service climate in hospitality to discuss the future of the constructs as a sustainable strategy.

Design/methodology/approach - The study conducted a bibliometric (Bibliometrix) and network (VOSviewer) analysis to review the literature of 52 hospitality articles published between 2008 and 2020, covering 145 authors, 14 journals, 22 countries, and indexed with 240 authors keywords.

Findings - The "International Journal of Contemporary Hospitality Management" is the second most considerable accumulated growth of the hospitality service quality and service climate articles. China has the most citations (514), followed by the USA and Australia with 226 and 75 citations. The research trend topics showed that the keyword service climate is associated with leadership, motivation, and performance. Finally, it is essential to note that new service climate trends are related to Big data, and HR analytics.

Originality/value - This study is the first to utilize bibliometric analysis and structures of knowledge network analysis to assess the constructs of service quality and service climate as a sustainable strategy in the field of hospitality.

Keywords: Service Quality, Service Climate, Sustainable Strategy, Hospitality, Tourism, Bibliometric Study.

¹ Submitted article. Article submitted to International journal of Services, Economics and Management (Q3/Q4) – Number: IJSEM-137779. Co-authored with Maria Helena Almeida, PhD, Maria José de Sousa, PhD.

2.1 Introduction

With the growth of services and the evolution of the concept "service", which seem to have changed in the last decades, in theory, and practice, knowing the literature insights in the area of "service climate" and "quality of service" is increasingly relevant, in the hospitality sector. The perception of policies, procedures, and practices that are rewarded, supported and expected in what concerns the provision of quality service – service climate (Saito, Solnet, Robinson, & Paulsen, 2021; Schneider, 1980), as well as the knowledge of the organizational orientation for the service and the recognition of the importance of the attendance have given origin to discoveries in the scope of relevant determinants of the service (Hong, Liao, Hu, & Jiang, 2013; Qiu, Alizadeh, Dooley, & Zhang, 2019). Other findings have explored the extent to which the attitudes and behaviors of the frontline employees in contact with clients may affect their perceptions towards the satisfaction and quality of the service (Bowen & Schneider, 2014; Schwepker Jr & Dimitriou, 2021). Thus, the satisfaction of the employee-client interface would result directly from the emotional contamination (Grandey, Goldberg, & Pugh, 2011) and indirectly from the service climate as a mediator between the variables of the employee and the client (Bowen, 2016). However, the role of the frontline employees, "suppliers" of the service and influencer of the clients' perceptions regarding service quality through organizational characteristics (Bowen & Schneider, 2014), seems to have changed. The insights predominantly focusing on the employees have found valid reasons to start including the clients more fully, in theory and research. "Client experience" seems to be the motto in the perception of the service, in contemporary hospitality, and the tourism industry (Hwang & Seo, 2016; Pijls, Groen, Galetzka, & Pruyn, 2017). As the new service context does not reconcile with a mere dyadic exchange of singular employee-client meetings, it seems to be moving towards interaction systems and collaborative networks (Lusch, 2011), composed by many organizational and individual actors, to provide a range of experiences in the client from several complementary suppliers. The functional delivery of the system, in the scope of an emotional co-creation of experiences, seems to determine the value of experiences increasingly difficult to detect, describe and fulfill (Shulga, Busser, Bai, & Kim, 2021; Sørensen & Jensen, 2015). And, the determination of the quality of the service seems to involve the understanding of the new trend of co-creation, as joint, collaborative, concurrent, and similar in the production of new material, symbolic value, and co-created experiences (Boadi, He, Boadi, Antwi, & Say, 2020).

Thus, the perceptions of the employees about the climate would be connected to measures of financial performance (Uyar, Kilic, Koseoglu, Kuzey, & Karaman, 2020), a relationship that is gaining wide exposure through the "service profit chain" (Sasser, Schlesinger, & Heskett, 1997). The service climate is, therefore, an intangible, unique, and not replicable organizational phenomenon. The unique characteristics of each hotel, at the level of HR practices, leadership, and support systems (Bowen & Schneider, 2014), as well as the motivational dimension (Salanova, Agut, & Peiro, 2005), are organizational and psychological predictors that make this asset exclusive. It is in this inimitability (Ployhart, Van Iddekinge, & MacKenzie Jr, 2011) that the basis of the climate is born as a competitive and sustainable advantage associated with the client's experiences and, consequently, to the financial performance. As the consumer is the final referee of the strategical success (Druker, 1954 in Priem, 2007), the contemporary company is centered on the creation of experienced structures and on the support to experienced activities where the art of the strategist consists of helping the consumers understand and experience "use value" in a competitive environment where other companies are also struggling to win over consumers (Priem, 2007). This strategic, shared, and interdisciplinary perspective implies that the strategic management of human resources (SMHR) focuses on the specification of the functions and essential competencies of the employees for the creation of value for the client and organizational success (Bowen, 2016). These functional competencies are, knowing how to be an "innovator" (Lages & Piercy, 2012), generator of new ideas, deciphering the clients' and managers' needs; knowing how to be a "differentiator" in the customization of the service and the identification of small details ((Bolton, Gustafsson, McColl-Kennedy, Sirianni, & Tse, 2014); knowing how to be an "enabler" to new technologies and interpersonal skills; knowing how to be a "coordinator" of interdependent functions, of employees, clients, and operating resources integrated with the co-creation of values (A. L. Ostrom, Parasuraman, Bowen, Patrício, & Voss, 2015). Quality and sustainability seem to unite when social responsibility, environmental performance, and business results come together. The consumers look for a social commitment to improve the organizational climate and to stimulate the construction and maintenance of healthy relationships. Which will be the literary trends at the turn of the century?

In recent years, there are many bibliometric studies conducted within the tourism and hospitality context. However, to the best of the authors' knowledge, there is no prior

bibliometric study to systematically review and visually map the big data concerning the integration between service quality and service climate, considering the scientific production of the leading journal in the tourism and hospitality area. To this end, the connection of "service climate" and "service quality" may reveal interesting discoveries in the hospitality field in terms of theory and practice. The current paper pursues to systematically review and visually map the constructs quality of service and service climate for sustainable strategy definition in the hospitality context.

This article will be structured as follows. Research methods are illustrated in the second section, while results and discussion are provided in the third section. Section 4 represents conclusions and implications for theory and practice, whereas limitations and future research are given in the last section.

2.2 Methodology

The methodology of this paper is a structured literature review (SLR) and analyses state of the art of service quality and service climate in the business to the consumer hospitality and tourism industry. An SLR is a rigorous approach that creates knowledge and identifies research trends and the future research agenda for the field studied. According to Tranfield, Denyer, and Smart (2003), an SLR is an empirical grounding that avoids missing seminal articles and reduces researcher bias. Following Tranfield et al. (2003) proposed strategy, this structured review is based on a manual filtering method that can be replicable and allows to minimize bias in the results achieved. This method allows authors to identify and synthesize all contributions in quantitative and qualitative outcomes. Thus, to operationalize the bibliometric analysis, an initial bibliographic search was performed in the Clarivate Analytics' Web of Science (WoS) database. The analysis was divided into 3 stages: data collection, data analysis, and data visualization, to review the social, intellectual, and conceptual structure (Cuccurullo et al., 2016) of the constructs.

2.2.1 Data extraction and main criteria

On October 20, 2020, we searched the terms “quality of service” and “climate of service” [TS = (“quality of service”) AND TS = (“Climate of service”)] in all collections of the Web of Science. The main criteria were to choose articles in English, peer-

reviewed, published in 'top-tier' scientific journals. The impact factor of scientific journals in the hospitality and tourism field was defined as eligibility criteria. In this way, we analyzed Law, Chan, and Zhao (2019) and Pahlevan-Sharif, Mura, and Wijesinghe (2019), and created a top-20 ranking with data of Scholar Metrics (Google), based on the "h-index" and "h-median", and "Cite Score metrics for Journal and Serials" (Elsevier).

The plan defines the research period (timespan) to 2008-2020 and included articles dated until October 2020. The final data collection were exported to a reference management software package produced by Clarivate Analytics (EndNote X8.2) to eliminate duplicate publications and manage data.

2.2.2 Bibliometric analysis and network visualization

The bibliometric analysis followed the Sweileh et al. (2017) methodology. It was operationalized with Bibliometrix R studio package 3.0.1 in the Biblioshiny version (Aria & Cuccurullo, 2017).

Following Aria, Misuraca, and Spano (2020), there were construed the three structures of knowledge: conceptual, intellectual, and social to review, through visualization techniques, networks of authors, institutions, and countries, networks of citations and references, and networks of keywords and keywords-plus.

For constructing and visualizing bibliometric networks, we used VOSviewer software (Van Eck & Waltman, 2010) because some advanced features are available for creating bibliometric mapping based on a unified structure (Waltman, Van Eck, & Noyons, 2010) and already used in many publications (www.vosviewer.com/publications). Networks created, visualized, and explored using this software include items. Items are the objects of interest (circles). The circle diameter shows the impact of this item on the network. There can be a link between any pair of items and no more than one link. Each link has strength and shows the distance between the different items. Items may be grouped into clusters. The colors differentiate the clusters and their location. The lines' thickness shows the connection's strength (Van Eck & Waltman, 2010).

2.3 Results and discussion

2.3.1 Collection

From the data extraction of the terms “service quality” and “service climate” [TS = (“service quality”) AND TS = (“service climate”)] in Web of Science (WoS). So far, we have got 3941 publications. With the introduction of "booleans" operators and eligibility criteria filters, we have got 54 articles, as seen in Table 2.II. After removing duplicates (n = 2), 52 articles remained.

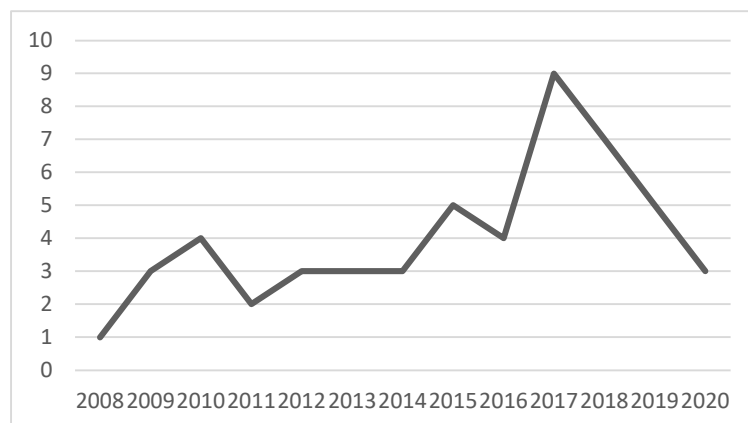
Table 2.II - Data collection and criteria

Eligibility criteria	WoS
Índex: SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI, CCR-EXPANDED, IC	3941
Timespan: 2000-2020	3842
Language: English	3749
Publications: Articles	2882
Top-20 sources	54

Legend: own elaboration | software: excel

Figure 2.1 shows a sustained increase in publications between 2008 and 2020. The first article was published in the “Journal of Service Management” in 2008. In this analysis period, the average number of annual publications was 4. The beginning year of the most intensive annual growth of the 52 articles was 2016, getting around the highest average of citations per year (8,8 Cit / Year). In 2017, we observed the highest number of publications with 9 articles (17,31%).

Figure 2.1 - Annual scientific production



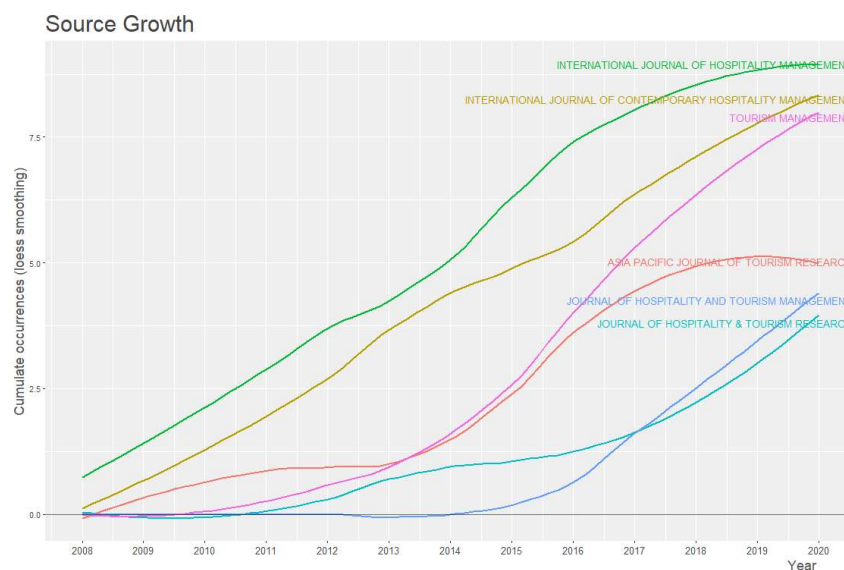
Legend: number of articles/years | own elaboration | software: excel

The average annual growth rate of the analysis was 9,59%. This growth has justified by the increase in the number of researchers and journals (Ware & Mabe, 2015), and related to the increased interest in the mediating role of the service climate, at the individual level (Jiang, Gu, Dong, & Tu, 2019) and the organization level (Dioni Elche, Pablo Ruiz-Palomino, & Jorge Linuesa-Langreo, 2020; Catherine Prentice, Erdan Ma, & IpKin Anthony Wong, 2019), with variables that influence sustainability and competitiveness in the field of hospitality.

2.3.2 Sources

The 52 articles were published in only 14 scientific journals. Bradford's Law analysis (Brookes, 1969; Lockett, 1989) noted three clusters: the core zone comprises 25 articles (48,08%) published by only 3 journals. An intermediate zone with 13 articles (25%) in 3 journals and the external zone with 8 journals and 14 articles (26,92%). The 3 sources with the most significant impact (“h-index”, “g-index”, “total citations”) are the “International Journal of Hospitality Management” with 9 articles, the “International Journal of Contemporary Hospitality Management” with 8 articles, and “Tourism Management” with 8. These 3 sources have 731 citations which represent 67,44%. Figure 2.2 shows the growth dynamic (cumulate occurrences) of the 6 most relevant sources. In annual terms, the source "Journal of Hospitality & Tourism Research" presents, since 2015, an increase in annual occurrences.

Figure 2.2 - Growth dynamic



Legend: Source growth, cumulate | own elaboration | Software: R Studio biblioshiny

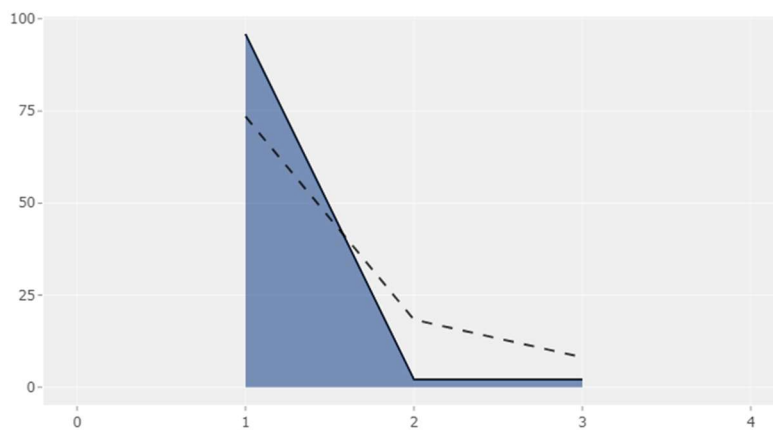
2.3.3 Authors

From the collected data, we identified 145 authors of 52 articles. Only 4 articles (7.69%) were of single authorship. 48 articles (92.31%) were of multiple authorship, representing an average of 0.359 articles per author, and 2.79 authors for each article. The average number of co-authors per article was 2.92. The collaboration index is 2.94 (Elango & Rajendran, 2012; Koseoglu, 2016).

Through Lotka's Law (Lokta, 1926) for scientific productivity (Figure 2.3), only 5 authors (3,5%) can be considered "core authors" with more than 2 articles published, and 140 are occasional authors (96,5%) with 1 article.

The authors with the most significant impact measured by total citations are Ronald Clark, Michael Hartline, and Keith Jones, co-authors of the article "The effects of leadership style on hotel employees' commitment to service quality", with 86 citations. Through the "h-index" and "g-index" measures, the most impacting authors are Meizhen Lin and Qian Ling, co-authors of 3 articles, with 75 citations. Kimberly Mathe is the author with the most significant time gap (4 years) between the two articles. This paper only contains articles in English published in the 20 selected journals. If eventually, we had used more journals or other databases such as Scopus, the results would have been different.

Figure 2.3 - Frequency distribution of scientific productivity



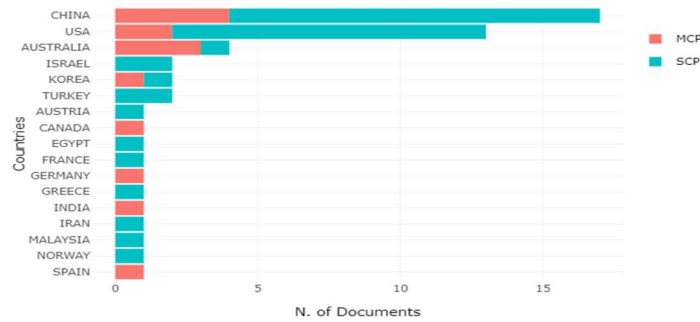
Legend: % of authors / documents written | ---- Theoretical distribution | own elaboration | Software: R Studio biblioshiny

2.3.4 Countries

Throughout the analysis, we identified 22 countries. Regarding the number of citations per country, China has the most citations (514), followed by the USA and Australia with 226 and 75 citations, representing 47.68%, 20.96%, and 6.96%. In terms of average citations per year, Spain is the leader, with 41 citations. Figure 2.4 shows the

international collaboration intensity of countries (MCP – Multiple countries publication). In absolute terms, China (MCP ratio =0,235) has 4 articles, and Australia (MCP ratio =0,75) has 3 articles with at least one co-author from a different country. However, we found a higher international collaboration (MCP ratio=1,0) in 4 countries: Canada, Germany, Spain, and India, because they only have 1 multiple country publication.

Figure 2.4 - Corresponding author's country

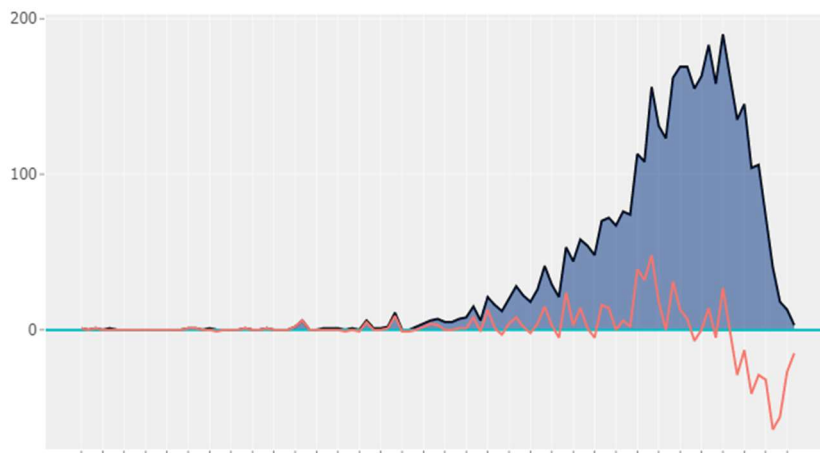


Legend: Countries/number of documents | dark – multiple countries publications | clear – single country publication | own elaboration | Software: R Studio biblioshiny

2.3.5 Citations

The total citations from the 14 sources are 1,084, with an average of 20.85 citations per document. Thus, each article's average number of citations per year is 3.26. It is not exactly a high average compared with other science fields, such as Environmental Sciences, with 159 average citations per article. However, it is superior to language, Linguistics, Social Issues, or demographics (Patience, Patience, Blais, & Bertrand, 2017).

Figure 2.5 - Reference publication year spectroscopy (RPYS)



Legend: Blue - Cited references per year | Orange – Deviation 5-year median | own elaboration | Software: R Studio biblioshiny

The year that presented the best average of citations was 2016, with 8.8, and the lowest average was in 2017, with 2.7. Tables 2.III and 2.IV shows the top-10 articles and cited authors, 4 of which were published by “Tourism Management”. The article with more citations was “The effects of leadership style on hotel employees’ commitment to service quality”, by Clark, Hartline, and Jones (2009), with 86 citations and an average of 7,17 per year. The title analysis of the 10 most cited articles showed the word “quality” in 3 articles and "climate" in 2 articles. The most relevant words in the abstracts of these articles are "service", "customer", "study", "climate" and "quality".

Table 2.III - Cited articles: Top-10

Au	Ti	Tc	Py	So
Clark Ra;Hartline Md; Jones Kc	The Effects Of Leadership Style On Hotel Employees' Commitment To Service Quality	86	2009	Cornell Hospitality Quarterly
Tang Tw; Tang Yy	Promoting Service-Oriented Organizational Citizenship Behaviors In Hotels: The Role Of High-Performance Human Resource Practices And Organizational Social Climates	85	2012	International Journal Of Hospitality Management
Coghlan A	Facilitating Reef Tourism Management Through An Innovative Importance-Performance Analysis Method	59	2012	Tourism Management
Lee Cf; Huang Hi; Yeh Hr	Developing An Evaluation Model For Destination Attractiveness: Sustainable Forest Recreation Tourism In Taiwan	58	2010	Journal Of Sustainable Tourism
Hsiao C; Lee Yh; Chen Wj	The Effect Of Servant Leadership On Customer Value Co-Creation: A Cross-Level Analysis Of Key Mediating Roles	56	2015	Tourism Management
Ling Q; Lin Mz; Wu Xy	The Trickle-Down Effect Of Servant Leadership On Frontline Employee Service Behaviors And Performance: A Multilevel Study Of Chinese Hotels	55	2016	Tourism Management
Chang Kc	Effect Of Servicescape On Customer Behavioral Intentions: Moderating Roles Of Service Climate And Employee Engagement	54	2016	International Journal Of Hospitality Management
He Yq; Li Wl; Lai Kk	Service Climate, Employee Commitment And Customer Satisfaction Evidence From The Hospitality Industry In China	51	2011	International Journal Of Contemporary Hospitality Management
Dortyol It;Varinli I;Kitapci O	How Do International Tourists Perceive Hotel Quality? An Exploratory Study Of Service Quality In Antalya Tourism Region	46	2014	International Journal Of Contemporary Hospitality Management
Vila Td; Darcy S; Gonzalez Ea	Competing For The Disability Tourism Market A Comparative Exploration Of The Factors Of Accessible Tourism Competitiveness In Spain And Australia	41	2015	Tourism Management

Legend: own elaboration | software: R Studio biblioshiny

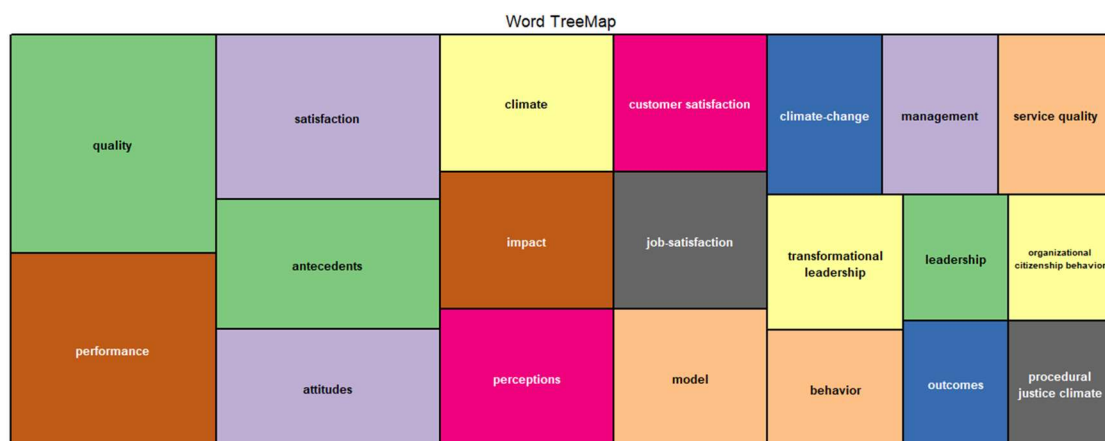
Table 2.IV - Author index

Author	h_index	g_index	m_index	TC	NP	PY_start
LIN MZ	3	3	0,6	75	3	2016
LING Q	3	3	0,6	75	3	2016
MATHE K	2	2	0,25	24	2	2013
WU XY	2	2	0,4	70	2	2016
WONG IA	1	2	0,2	22	2	2016
AAS O	1	1	0,091	17	1	2010
ABBOTT JL	1	1	0,5	4	1	2019
ANDRONIKIDIS AI	1	1	0,083	21	1	2009
ASTAKHOVA M	1	1	0,143	28	1	2014
BACK KJ	1	1	0,5	4	1	2019

Legend: own elaboration | software: R Studio biblioshiny

Figure 2.5 shows the reference publication year spectroscopy (Marx, Bornmann, Barth, & Leydesdorff, 2014). The results emphasize the year 2000, where we identified a historical root associated with the multilevel theory (Bliese, 2000; Klein & Kozlowski, 2000). This association could be explained through the service climate since this variable is often measured using multilevel modeling techniques (Dioni Elche et al., 2020; Catherine Prentice et al., 2019).

Figure 2.6 - Word TreeMap: Keywords-Plus



Legend: Top-20 Keywords-plus | own elaboration | Software: R Studio biblioshiny

Figure 2.7 - WordCloud: Author's Keywords



Legend: Top-20 Author's Keywords | own elaboration | Software: R Studio biblioshiny

2.3.6 Keywords

The authors indexed the 52 articles with 240 keywords and WoS with 225 keywords-plus. At the level of bibliometric analysis, when the objective is to review the structures of knowledge, the keywords-plus are much more efficient than the author's keywords. However, they are more diffuse in representing the article's content (Zhang et al., 2016). For example, the core author keyword is "service climate" with 9 occurrences. Then, "service quality", "service" and "customer satisfaction" stood out with 7, 5, and 4 occurrences (figure 2.7). One TreeMap (figure 2.6) was created for keywords-plus analysis, with the 20 most used words to help for quickly understanding the most relevant terms and comparing the distinct fields.

2.3.7 Structures of knowledge

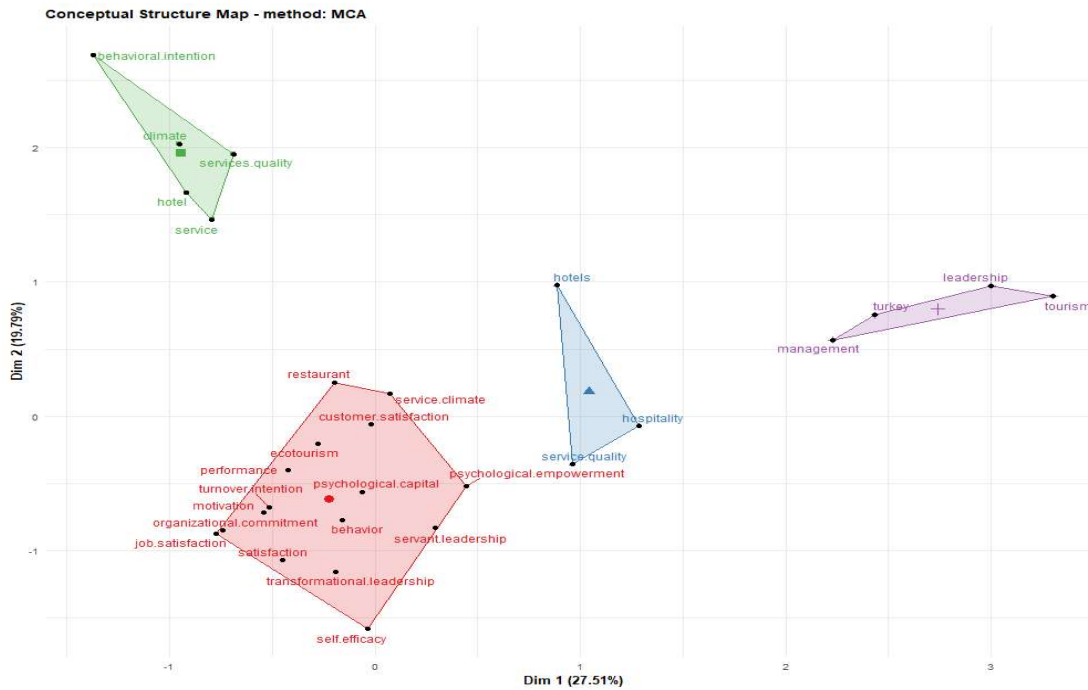
The following sections present conceptual, intellectual, and social knowledge structures to answer the research questions.

2.3.7.1 *Conceptual Structure of Knowledge*

We can analyze the relationships between concepts, themes, and words in a given group of articles to identify science trends and explore the different fields in the research through the conceptual structure (Aria et al., 2020; Tijssen & Van Raan, 1989). Each scientific trend theme is characterized by a set of author's keywords or citation indexes,

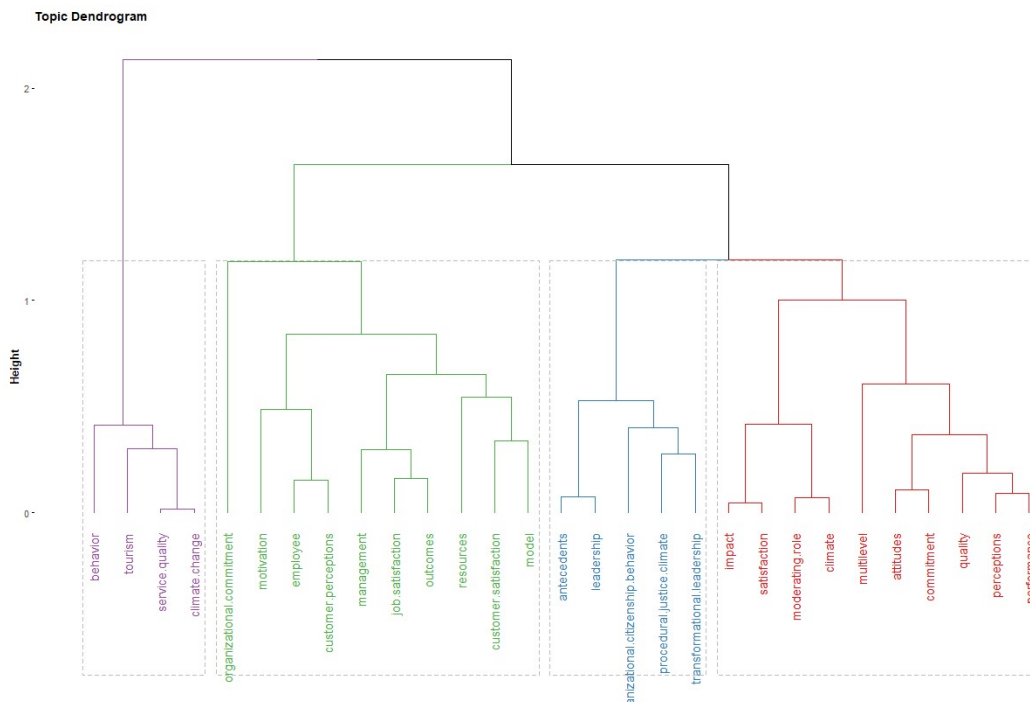
the keywords-plus encoding used by the WoS (Garfield & Sher, 1993). To map the conceptual structure, we use two techniques: Factor analysis and the Co-words network.

Figure 2.8 - Conceptual structure map: Author's Keywords



Legend: own elaboration | Software: R Studio biblioshiny

Figure 2.9 - Topic Dendrogram: Keywords-plus

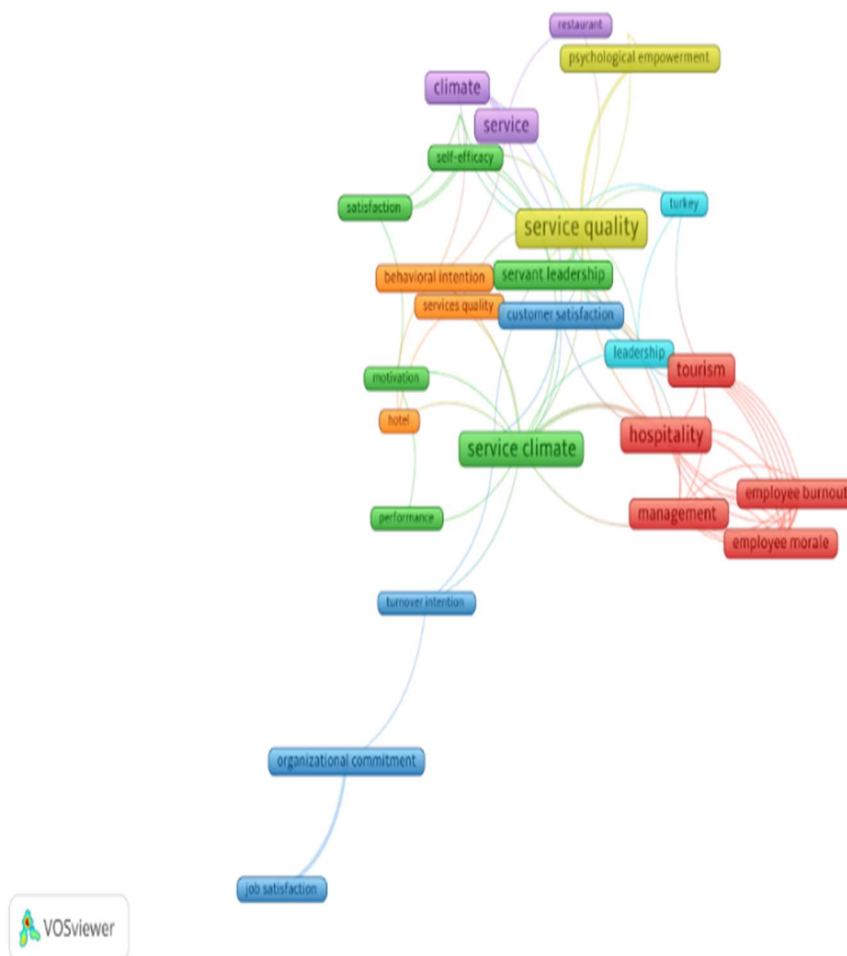


Legend: own elaboration | Software: R Studio biblioshiny

To obtain the conceptual structure map (figure 2.8), we used the factorial analysis of the keywords using the Multiple Correspondence Analysis (MCA) technique to dimension reduction. The results show 4 clusters of authors' keywords, grouped by co-occurring keywords. Figure 2.9 shows the topic dendrogram with 4 clusters of keywords-plus and the structure of scientific fields.

In the Co-words network, the authors' keywords mapping (figure 2.10) showed 34 keywords with a strong link and co-occurred in the same articles. Author keywords like service quality, service climate arise related to servant leadership, employee burnout, communication strategy, psychological empowerment, customer satisfaction, or organizational commitment. It is essential to refer that the keyword service climate is associated with leadership, motivation, and performance.

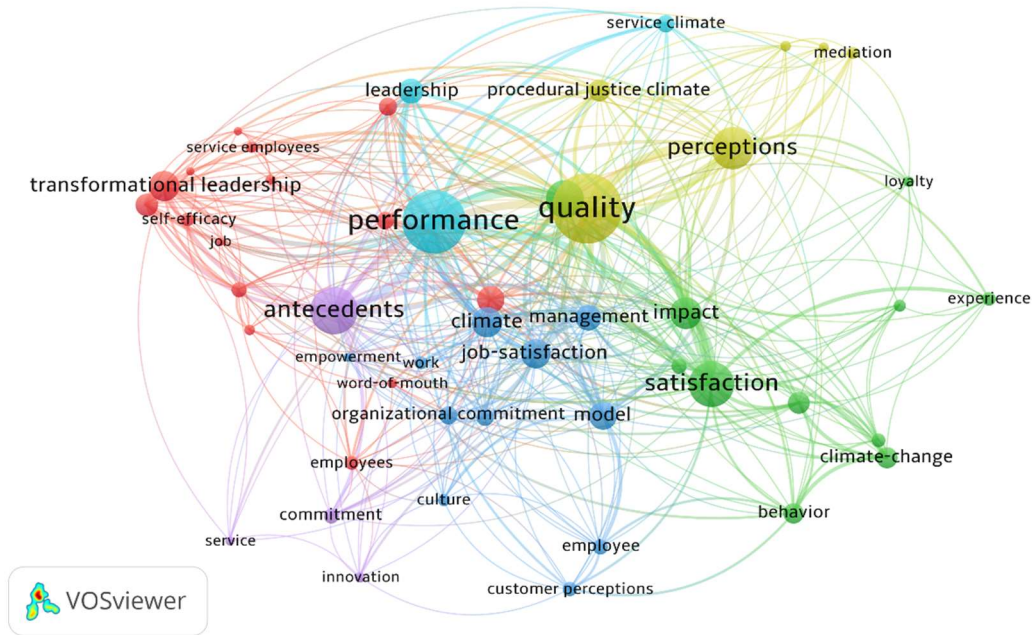
Figure 2.10 - Co-words network



Legend: own elaboration | Software: VOSviewer

We visualized and identified 50 words grouped in 6 clusters in the map by titles. The principal words being service, climate, quality, leadership, servant, employee, and performance. Although different, the mapping of keywords-plus (figure 2.11) corroborates these words' central relationships and shows the structure based on three powerful words: performance, satisfaction, and quality.

Figure 2.11 - Keywords-plus network



Legend: own elaboration | Software: VOSviewer

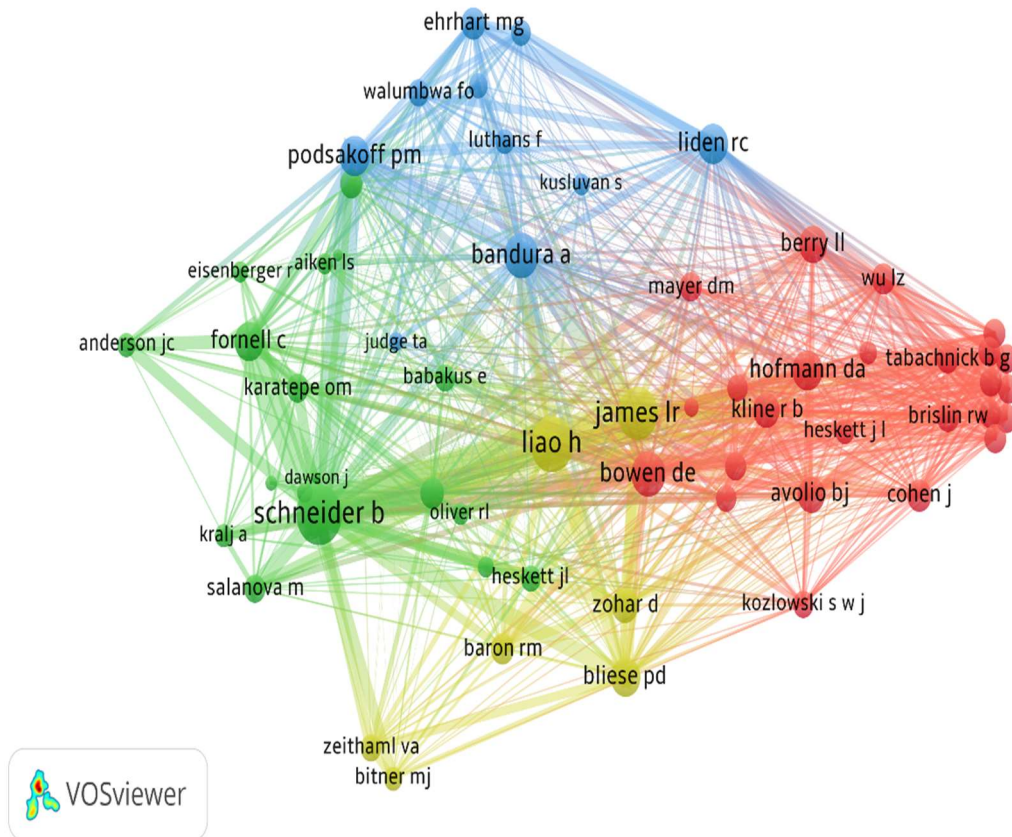
2.3.7.2 Intellectual structure of knowledge

In bibliometric analysis, namely in the analysis of the intellectual structure of knowledge, the co-citation network is one of the most common. For example, it is possible to visualize the network of two publications cited by the third and present relations between them bibliographic references.

Our data collection has 3271 bibliographic references. Figure 2.12 shows the 60 bibliographic references with more strength, where there are 4 clusters and 1364 links between them. We balance the strength and importance of different authors on the scientific community. The most cited bibliographic reference was the article "Linking the service climate and the customer's perceptions about service quality: Tests of a causal model" by Schneider, White, and Paul (1998), followed by authors like C. Fornell, A Parasuraman, A. Bandura or D. Hofmann, associated, respectively, with research topics

such as Structural Equation Models, Servqual, Social Learning Theory, and Hierarchical Linear Models.

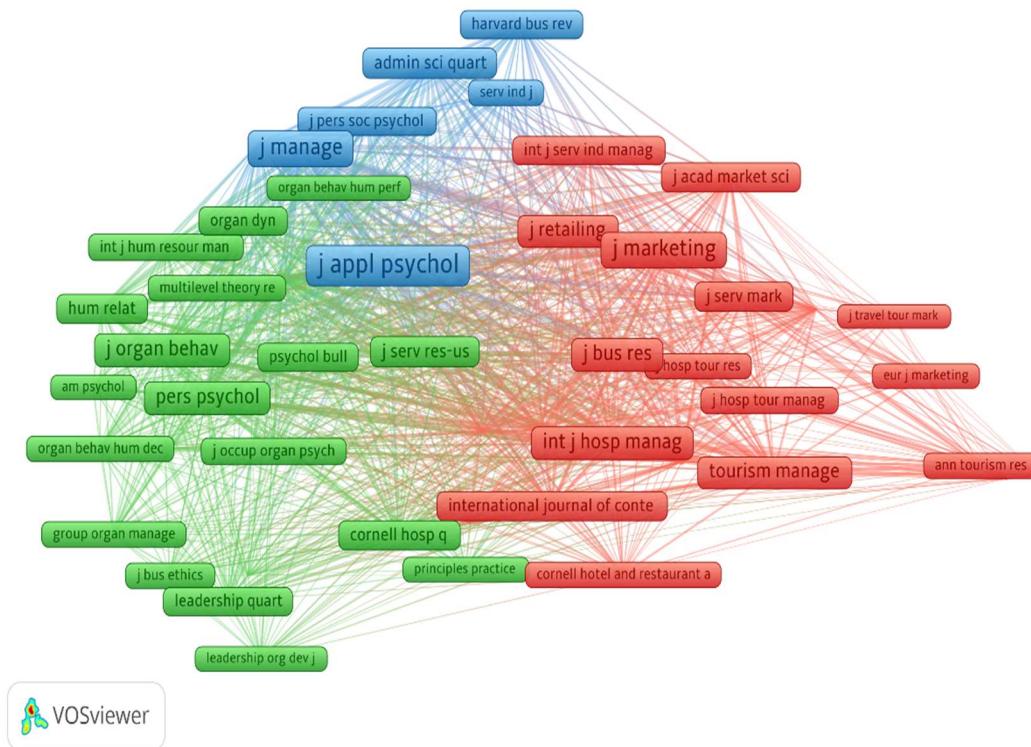
Figure 2.12 - Network visualization of authors



Legend: own elaboration | Software: VOSviewer

Figure 2.13 shows the network visualization of journals. This mapping results in co-citation analysis of journals for sources published articles on this scientific field. From the observation, we can see 3 clusters, differentiated by colors, where the commonly co-cited journals are grouped. It is visible that the most relevant journals are co-quoted with most others.

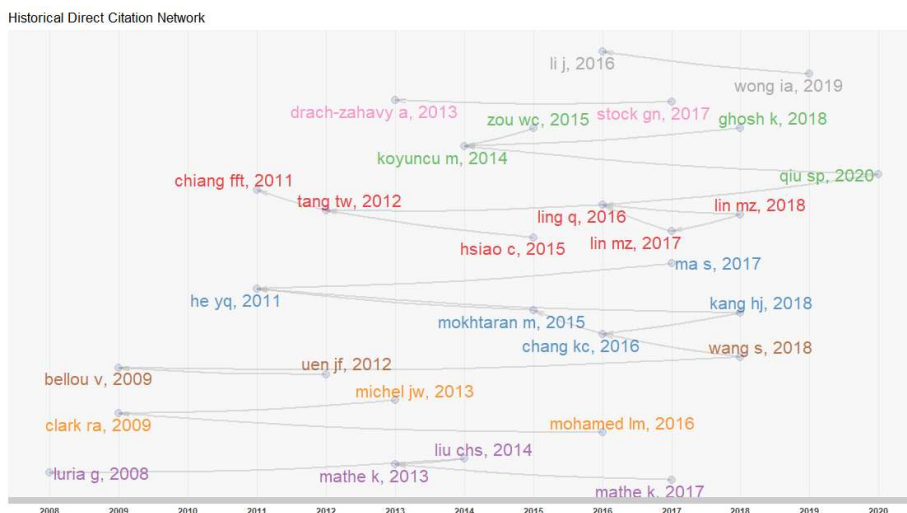
Figure 2.13 - Network visualization of journals



Legend: own elaboration | Software: VOSviewer

Through the historiographic mapping (figure 2.14) of the 52 articles, we visualize 8 research paths, the respective authors/articles, and the direct citation network.

Figure 2.14 - Historiography



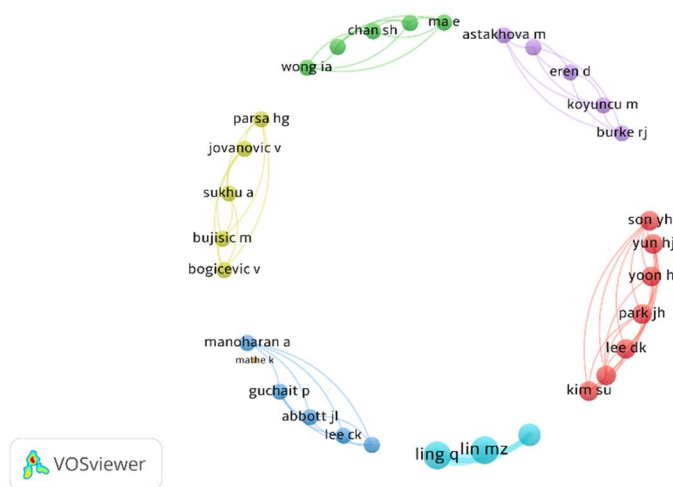
Legend: own elaboration | Software: R Studio biblioshiny

2.3.7.3 Social structure of knowledge

The collaboration index (CI) has a value of 2.9, much higher than the 1.20 presented in the evolution of the social structure of the hospitality management literature in 1960-2016 (Koseoglu, 2019). However, our study has a lower index than "Sustainable Tourism" with 3.4 (Martí-Parreño & Gómez-Calvet, 2020). The collaboration between authors (CI) is related to the need to address different topics within the economic and management sciences in a multidisciplinary and interdisciplinary environment. Figure 2.15 shows the map of the collaboration network between authors. It is centered on the magnitude of articles in co-authorship. Of the 145 authors, the map visualizes the 31 authors with more collaborations, grouped in 7 different colors by cluster, with 64 links. Authors with a strong link of collaboration had the closest circles.

To highlight the visualization of a strong collaboration between Meizhen Lin (Huaqiao University), Qian Ling (South China Normal University), and Xiaoyi Wu (Xiamen University), associated with the articles: “Is role stress always harmful? differentiating role overload and role ambiguity in the challenge-hindrances stressors framework” de M. Lin and Ling (2018), “Assessing the effectiveness of empowerment on service quality: a multilevel study of Chinese tourism firms” de M. Lin, Wu, and Ling (2017), e “ The trickle-down effect of servant leadership on frontline employee service behaviors and performance: a multilevel study of Chinese hotels” de Q. Ling, M. Lin, and X. Wu (2016).

Figure 2.15 - International authors collaboration

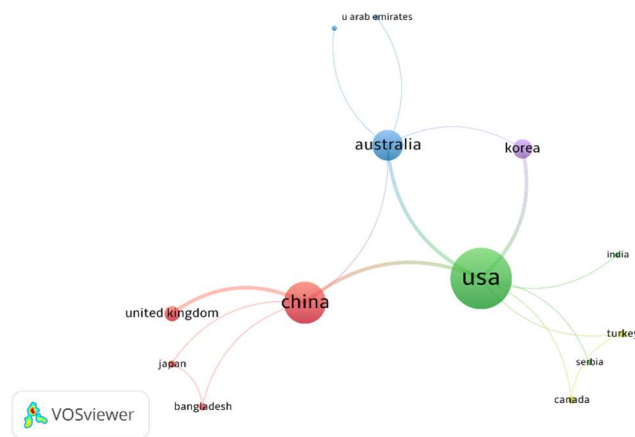


Legend: own elaboration | Software: VOSviewer

The thickness of the lines between the two countries shows the strength of the connection. Some of the 22 countries in our network are not connected. The most extensive set of connected countries consists of 13 in 5 clusters with 16 links (figure 2.16). The map of the collaboration network between countries shows the USA with 7 links, the country with the most international collaborations. China has an essential role in connecting to Europe through the UK. The main collaboration pairs are USA – China, USA – Australia, and China – Australia.

A significant relationship is visible between Korea, Australia, and the USA. This collaboration between these countries is associated with the article “The influence of perceived forgiveness climate on service recovery performance: the mediating effect of psychological safety and organizational fairness” by Guchait, Abbott, Lee, Back, and Manoharan (2019).

Figure 2.16 - International countries collaboration



Legend: own elaboration | Software: VOSviewer

The institutions with more collaboration impact are the City University of Macau (China) and Florida State University (USA), with 4 articles. Then there is a group of 7 institutions with 3 articles, which include Ming Chuan University (China) Hong Kong Polytechnic University (China), Huaqiao University (China), Oklahoma State University (USA), Texas State University (USA), and the Seoul national university (Korea), thus corroborating the countries results. Some of the 98 institutions in our network are not connected. The most extensive set of linked institutions consists of 8 affiliations in 2 clusters with 11 links between them (figure 2.17). The relation between the City University of Macau (China) and Florida State University (USA) is associated with the

article “Effects of psychological contract breach on attitudes and performance: The moderating role of competitive climate” by J. J. Li, Wong, and Kim (2016).

Figure 2.17 - International institutions collaboration



Legend: own elaboration | Software: VOSviewer

2.4 Conclusions and Implications

The initial inspiration, based on the idea of systematical review and visually mapping two of the most crucial constructs, related to consumer behavior and business performance, namely service quality and service climate for sustainable strategy definition within the hospitality industry setting. The data were gathered from the Web of Science (WoS) database, analyzed, and visually mapped using R and VOSviewer software. The retrieved literature included 52 peer-reviewed articles, written in English and published in high-rank journals within the tourism and hospitality field from 2008 to 2020.

Despite the large number of papers published on service climate and service quality in the hospitality domain between 2008 and 2020, consistent research has been published in high-level journals, according to the findings. Author productivity, study impact in terms of citations, and geographical areas have all produced a profile of scholars and researchers who are geographically separated and collaborate seldom. Despite this, the optimistic growth patterns observed over the period examined are encouraging. The key thematic dimensions identified through content review in the papers are "service climate,"

"service quality," "service," and "customer satisfaction." In addition, the review of papers in these fields provided a better understanding of the current state of the art for the debate on business to consumer in the hospitality industry, particularly in terms of conceptual and organizational models, causal mechanisms of functioning, resources and performance indicators, and effects on hospitality organizations.

Concerning the annual production, it can be seen that there is a substantial growth in the number of publications associated with the studied variables during the given period. The peak value is recorded in the year 2017 with nine articles. However, it should be stressed that the search for data was till October 2020, as a result, the number of publications in 2020 is expected to be increased. This result reflects the fact that there is a considerable increase in the number of scholars all over the world since 2015, along with big data research in many domains and subjects (e.g., service quality and service climate) that appeared in various academic journals within different areas and categories (Ware & Mabe, 2015). In addition, service climate has been widely investigated as a mediating variable at both the individual's (Jiang et al., 2019) and organizational level (Dioni Elche et al., 2020; Catherine Prentice et al., 2019), taking into consideration the impact of some crucial factors affecting sustainability-related issues and competitiveness-related concerns within the hospitality setting.

In addition, the most productive journals in the themes of the current paper are 'International Journal of Hospitality Management', the "International Journal of Contemporary Hospitality Management", and "Tourism Management" 9, 8, and 8 articles respectively. The International Journal of Hospitality Management is the highest rank journal within the hospitality sub-category. At the same time 'Tourism Management' is the leading academic journal in the tourism sub-category of Tourism.

The retrieved data were produced by 145 authors. Out of 52 articles, there are 4 peer-reviewed articles with sole authorship. In comparison, most articles (48) were produced by multiple authorship including 141 authors. This implies the significant collaboration between authors around the world in such areas of research.

In this regard it is important to analyze the main implications of this research to the global debate:

Implication 1: Authorship', Journal Specializations, and contributions to knowledge advancements.

Consumer behavior, namely, service quality and service climate, are two important dimensions studied by several authors specialized in business-to-consumer studies in hospitality (Saito et al., 2021; Schneider, 1980). Furthermore, the sorts of journals are influenced by the junction of two separate disciplinary domains: service atmosphere and service quality in hospitality. Most parts of the journals are high-level journals in the field of hospitality. However, the perspective of analysis of the phenomenon depends on the profile of the researchers, if more embedded in the academy or if more linked to the world of organizations.

When the evolutionary trend of scientific articles is analyzed using structured literature analysis, there are increasingly intensive theoretical developments that have dealt with the topic of business to consumer service quality. There is a significant increase in articles in the last three years. Indeed, service climate in hospitality has also caught researchers' attention in recent years (Hwang & Seo, 2016; Pijls et al., 2017).

Anglo-Saxon countries (the United States and the United Kingdom) and China are the main geographical areas with the most authors. China has the highest number of citations, with 47,68% of the total citations. Undoubtedly, Chinese, USA, UK, and Australian universities are among the most important regarding studies in business to consumer in the hospitality industry.

Asian scholars, on the other hand, are undeniably the forerunners of business theories for customers in the hospitality industry (Hwang & Seo, 2016; Pijls et al., 2017). Regarding international collaboration researchers from Canada, Germany, Spain, and India, are the most active.

The most important contributions include the impact of service atmosphere and service quality on organizational processes, as well as innovative organizational strategies. Many authors studying the business to consumer sphere in the hospitality industry use these research contributions as a point of reference.

Implication 2: A future research agenda about quality and service climate in the business to the consumer hospitality industry

The study produced some exciting results in identifying potential research areas within this innovative digital business-to-consumer framework, including thematic clustering, content analysis, and impact citations. Starting with the development of Schneider et al. (1998) theoretical model "Linking the service environment and the

customer's expectations about service quality: The results of "tests of a causal model," which allowed for the identification of factors related to service climate and service quality (now solidified in literature), indicate first and foremost the obvious and growing interest in service climate and service quality.

This evidence can be seen in the increased number of studies published in recent years on the issue of service climate and service quality. The impact is verified by the number of articles identified by the search made in the most relevant scientific databases. Among the main topics studied "service climate", "service quality", "service" and "customer satisfaction" are the most relevant in terms of being included in the studies considered in this analysis.

Academic curriculum in the hospitality business, particularly courses focused on consumer behavior, are expected to benefit from a high impact on service atmosphere and service quality. In this regard, field research aiming at identifying which aspects of service climate and service quality may be of greatest interest to hospitality faculty has a lot of potential.. It is not only at the educational level, that this will impact, but also at the practical level, regarding the hospitality sector, as the theoretical models and the empirical research creates frameworks to create new management processes and practices, and also contributes to improving the old ones already implemented, but that needs to adapt to new realities and the current needs of the customers. In this regard, the future agenda should focus on innovative organizational approaches, new mechanisms for incorporating employees and increasing their satisfaction and motivation, as they are engines for improving the service climate and, as a result, the service quality. This is evident from the papers from Schneider (1980) and Saito et al. (2021).

Following the primary issues discussed in the literature, the article's next section proposes some further prospective research possibilities.

2.5 Limitations and future research

The findings obtained in the present study must be completed by reporting some methodological limitations, which may pave the way for future investigations. Firstly, as we used only a single database in our analysis - Web of Science- our results may show some disparity. It would be advisable to increase this data collection, extending it to other databases, such as Google Scholar and/or Scopus dataset.

A second limitation results from the analysis only Top-20 in the tourism and hospitality area used in the present investigation to select journals with the greatest impact. The extension of this analysis to other non-indexed articles could certainly complement and clarify the analysis carried out in this article. Articles published in the rest of tourism and hospitality journals could be analyzed in further work.

A third limitation results from the fact that the search for authors was done only digitally, not allowing identifying the various combinations of the nomination of the same author. A manual collection would be recommended to identify the use of different initials or names in different publications, by the same author.

Finally, the geographical distributions of publications were compared without considering the effects of population correction in countries. This aspect raises the last clue, considering the population scale of the countries involved.

This research intends to contribute to improving the answer to the current challenges of the organizations that provide services to clients, to see a more productive society in which work contributes more effectively to the quality of life.

Declaration of agreement

This declaration of intent clarifies that all authors have contributed, collaborated, read, reviewed, and approved their submission by agreement. This paper, or part, has not been published in any source or submitted to any other source for evaluation.

Permission statement

There are no figures or tables that do not have original content, data, or results in this work. Therefore no permissions are warranted. All, without exceptions, contain information about the software used to build or obtain them.

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CHAPTER 3 – STUDY 2

A BIBLIOMETRIC ANALYSIS OF TRUST IN THE FIELD OF HOSPITALITY AND TOURISM²

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.

KEYWORDS: *Trust; Bibliometrics analysis; Structures of Knowledge; Hospitality; Tourism.*

² Article published

Palácios, H., de Almeida, M. H., & Sousa, M. J. (2021). A bibliometric analysis of trust in the field of hospitality and tourism. *International Journal of Hospitality Management*, 95, 102944. Received 12 September 2020 / Revised 8 April 2021 / Accepted 11 April 2021 / Available online 24 April 2021 / Version of Record 24 April 2021. <https://doi.org/10.1016/j.ijhm.2021.102944> - 39 citations (google scholar December 2022).

3.1 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, Ronteltap, Corten, and Buskens (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, Leis, Dubovitskaya, Schegg, & Schumacher, 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 & Sherman, 1998). Hotels only control what makes them more trustworthy and their reputation (Artigas, Yrigoyen, Moraga, & Villalón, 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, Sun, & Leung, 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, Agarwal, Taffler, & Brown, 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, Pan, & Chen, 2017; Zhu et al., 2014), and trust (Martínez & Rodríguez del Bosque, 2013). Consequently, this influences loyalty (Wilkins, Merrilees, & Herington, 2009), customer satisfaction (Kaveh, Mosavi, & Ghaedi, 2012), and service quality (Liat, Mansori, & Huei, 2014).

Revenue Management (Ivanov & Zhechev, 2012) is a management concept used to calculate the best pricing policy, to optimize the profits 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, Kouremenos, & Kyrezis, 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 Mariño-Romero, Hernández-Mogollón, Campón-Cerro, and Folgado-Fernández (2020), loyalty and reputation influence RevPAR in hotels. On the other hand, satisfaction and trust are strong determinants of loyalty (Florencio, Roldán, & Pineda, 2020; Rather & Hollebeek, 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, Sainaghi, & Viglia, 2019; Sánchez-Pérez, Illescas-Manzano, & Martínez-Puertas, 2019), this can improve competitiveness (Mehrez, 2020) and sustainability (Jalilvand, Vosta, Mahyari, & Pool, 2017).

Literature reviews play a vital role in the process of synthesizing scientific information and describing the state-of-the-art (Aria & 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 & 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].

3.1.1 Trust

Prior studies in various academic disciplines have investigated trust, such as sociology (J. D. Lewis & Weigert, 1985), management (Das & Teng, 1998), and marketing (Moorman, Deshpande, & Zaltman, 1993). Extensively examined in literature, different approaches characterize the concept of trust (Y. Kim & 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, Syed, Husnain, & Naseer, 2019; J. Liu, Wang, Fang, & Zhang, 2019) and adopt trust theories from psychology and sociology (R. M. Morgan & Hunt, 1994). Nowadays, it has become a critical topic (J. Liu et al., 2019) and has one of the most relevant variables in helping tourism sector businesses succeed (Ponte, Carvajal-Trujillo, & Escobar-Rodríguez, 2015). According to L. Wang, Law, Hung, and Guillet (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, Zaltman & Deshpande, 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, Grether, & Leach, 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) (R. M. Morgan & Hunt, 1994; Schoorman, Mayer, & Davis, 2007). Tourism and hospitality scholars tend to view trust as a two-dimensional construct

(reliability and integrity) (L. Wang et al., 2014). However, the benevolence dimension is assumed to play a pivotal role in inducing trusting relationships (Gregori, Daniele, & Altinay, 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, Premazzi, & Zerbini, 2010; Jin, Line, & Goh, 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 & Román, 2014).

Sirdeshmukh, Singh, and Sabol (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, Liang, & Xue, 2007), and may result in a solid emotional bond with a service provider (McAllister, 1995; L. Wang et al., 2014). Trust is an essential component to maintaining continuity in the customer-provider relationship (Han & Hyun, 2015; Luo & Zhang, 2016; L. Wang et al., 2014) and preserving long-term relationships between individuals, between organizations, and between an individual and an organization (Kantsperger & Kunz, 2010; R. M. Morgan & Hunt, 1994).

We identified a recent research domain in hospitality and tourism literature related to new economic cultures, such as collaborative consumption, sharing economy (X. Cheng, Fu, Sun, Bilgihan, & Okumus, 2019; Ye, Lei, Shen, & Xiao, 2020), and the “industrial revolution 4.0”. Scholars tend to view trust as one of the most decisive variables in e-commerce (W.-T. Wang, Wang, & Liu, 2016) that makes online transactions successful in the travel industry (Flavián, Guinalú, & Gurrea, 2006; Lu, Fan, & Zhou, 2016; Ponte et al., 2015). The influence of this variable is visible in works related to chat assistants (McLean, Osei-Frimpong, Wilson, & Pitardi, 2020), online travel agencies (Brun, Rajaobelina, Ricard, & Amiot, 2020), e-loyalty to tourism sites (Buhalis, López, & Martinez-Gonzalez, 2020), travel app users’ intentions (Choi, Wang, & Sparks, 2019), and intention to use biometric technology (Pai, Wang, Chen, & Cai, 2018).

3.2 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 & 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 & 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?

3.2.1 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 indexers 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, Chan, 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.

3.2.2 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 & 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 & 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). 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 colour are ways of grouping items by clusters.

3.3 Results

3.3.1 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 3.V. After, we imported the references into the EndNote X8.2 software. After removing duplicates (n = 6), 305 articles remained.

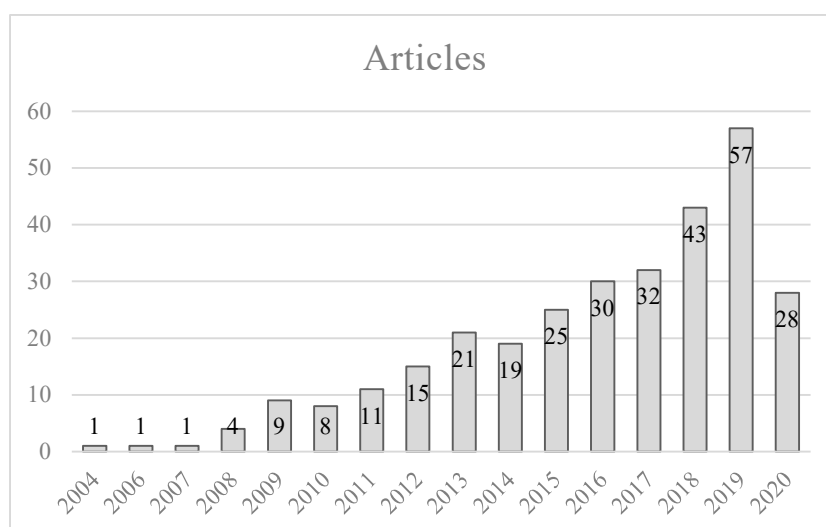
Table 3.V - Number of articles found per search

Search Criteria	WoS
Booleans operators Indexes = Expanded Timespan = All years language = English	182631
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

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 2004-2007, only with three articles (1.00%). The first publication was in the journal “Tourism Management” in 2004. Figure 3.18 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.

Figure 3.18 - Annual growth



Legend: Vertical axis - number of articles | Horizontal axis - years | own elaboration | Software: excel

3.3.2 Sources

Only 19 scientific journals published the 305 articles.

Table 3.VI - 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	0,875	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

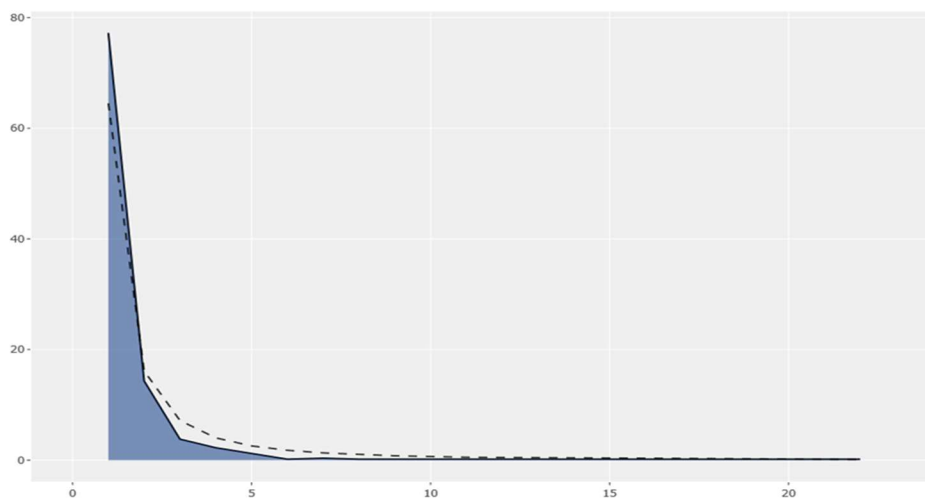
Legend: TC – Total Citations | NP – Number of publications | PY_start – Year of 1st publication | own elaboration | software: R Studio biblioshiny

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 3.VI, we can see the impact of the sources calculated through different measures.

3.3.3 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 & Rajendran, 2012; Koseoglu, 2016, 2019). Through the analysis of Lotka’s Law (Lokta, 1926) (Figure 3.19), 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).

Figure 3.19 - Frequency distribution of scientific productivity

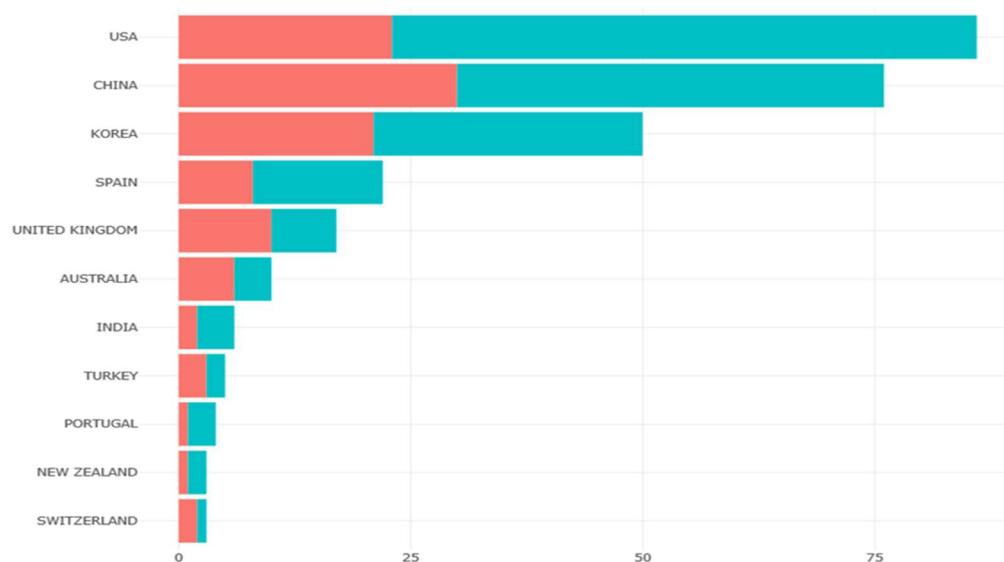


Legend: Vertical axis - % of authors | Horizontal axis – number of documents written | ---- Theoretical distribution | own elaboration
 | Software: biblioshiny

3.3.4 Countries

We identified the contribution of 43 countries. The USA is the country with the highest number of citations with 2 737 citations, followed by the Republic of Korea and China with 1 755 and 1 306 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. Figure 3.20 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).

Figure 3.20 - Corresponding author's country



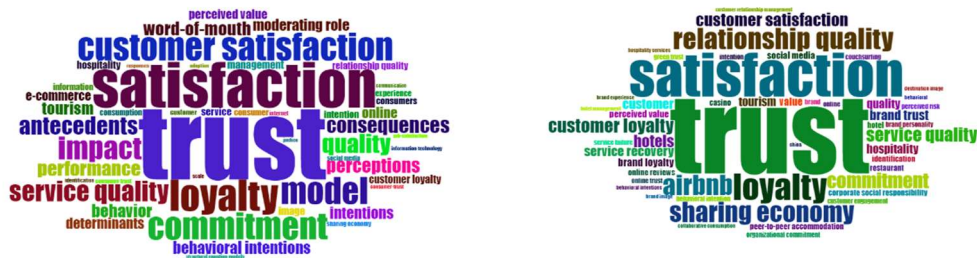
Legend: Countries/number of documents | dark – multiple countries articles | clear – single country article | own elaboration | software: biblioshiny

3.3.5 Citations

On 16 of June 2020, the summary of citations from the 19 combined journals shows 8 269 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.VII and 3.VIII, 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, Fleischer, & Magen, 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.

Figure 3.21 - Tag Clouds: Keywords



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

3.3.6 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 (figure 3.21) were created, with the top-20 keywords and keywords-plus.

Table 3.VII - 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;Alguezaui S;Mcleay F	Tourism management	2015	185
Modeling roles of subjective norms and trust 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: R Studio biblioshiny

Table 3.VIII - 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	0,667	578	9	2009
Hyun Ss	10	11	0,909	473	11	2010
Kim Wg	5	5	0,417	377	5	2009
Bilgihan A	5	6	0,625	362	6	2013
So Kkf	5	5	0,625	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	0,667	178	8	2012
Lee Js	4	4	0,333	158	4	2009
Lee Yk	2	4	0,222	119	4	2012
Back Kj	4	5	0,364	112	5	2010
Kim W	6	7	0,5	109	7	2009
Wu Hc	4	7	1,333	103	7	2018
Cheng Cc	4	5	1,333	93	5	2018
Kim J	3	4	0,6	93	4	2016
Hwang J	5	5	0,833	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: R Studio biblioshiny

3.3.7 Structures of knowledge

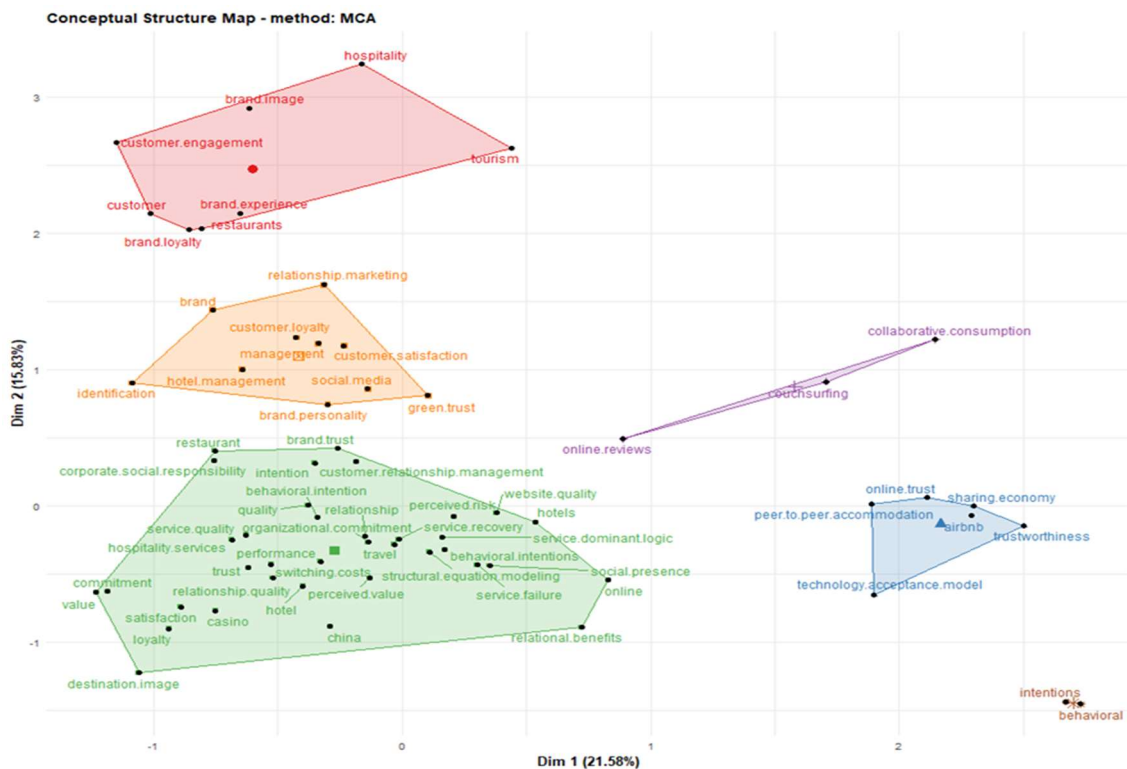
To answer the three research questions in this bibliometric analysis, we analyze three structures of knowledge: conceptual, intellectual, and social.

3.3.7.1 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 & Van Raan, 1989). Each field or scientific topic has characterized by authors keywords or WoS keywords-plus (Garfield & 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 figure 3.22, 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.

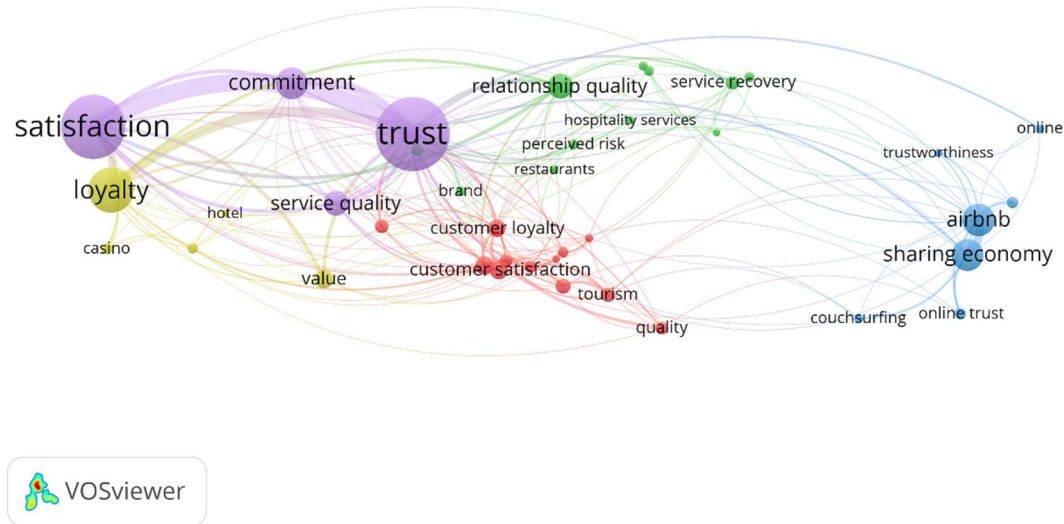
Figure 3.22 - Conceptual structure map



Legend: own elaboration | software: biblioshiny

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.

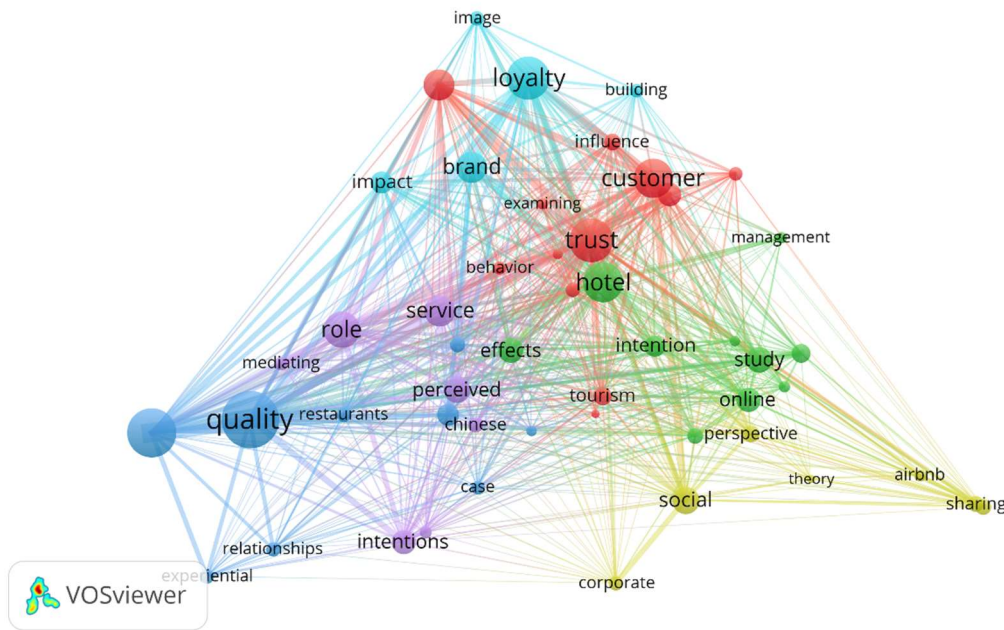
Figure 3.23 - Co-words network



Legend: own elaboration | Software: VOSviewer

The VOSviewer technique mapping of authors' keywords (figure 3.23) showed that keywords such as trust, satisfaction, loyalty, service quality, commitment, customer satisfaction, relationship quality, and perceived 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 (figure 3.24), 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.

Figure 3.24 - Titles network



Legend: own elaboration | Software: VOSviewer

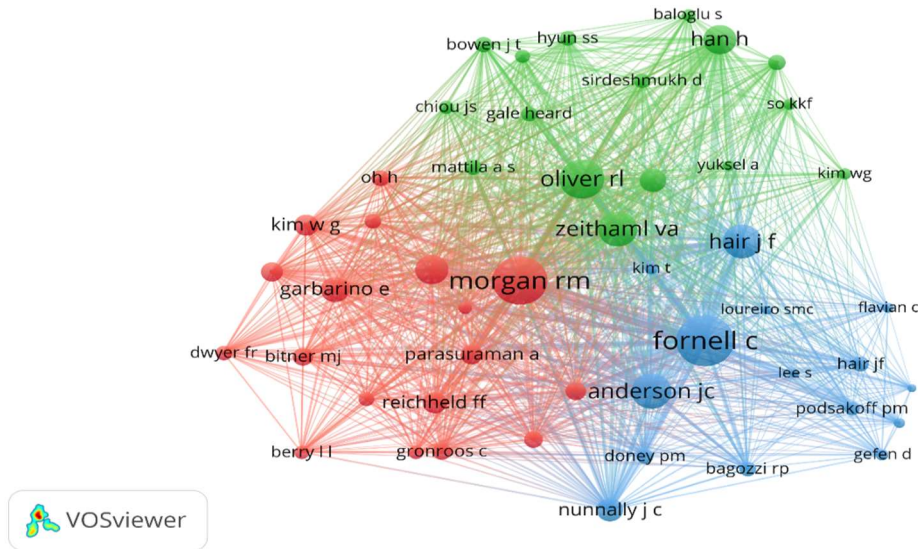
3.3.7.2 Intellectual structure of knowledge

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 figure 3.25, 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 & Larcker, 1981a), “Structural equation modeling in practice: A review and recommended two-step approach” (J. C. Anderson & Gerbing, 1988), “Relationships between providers and users of market research: The dynamics of trust within and between organizations” (Moorman, Zaltman, & Deshpande, 1992), “The commitment-

trust theory of relationship marketing” (R. M. Morgan & Hunt, 1994), and “The behavioral consequences of service quality” (Zeithaml, Berry, & Parasuraman, 1996).

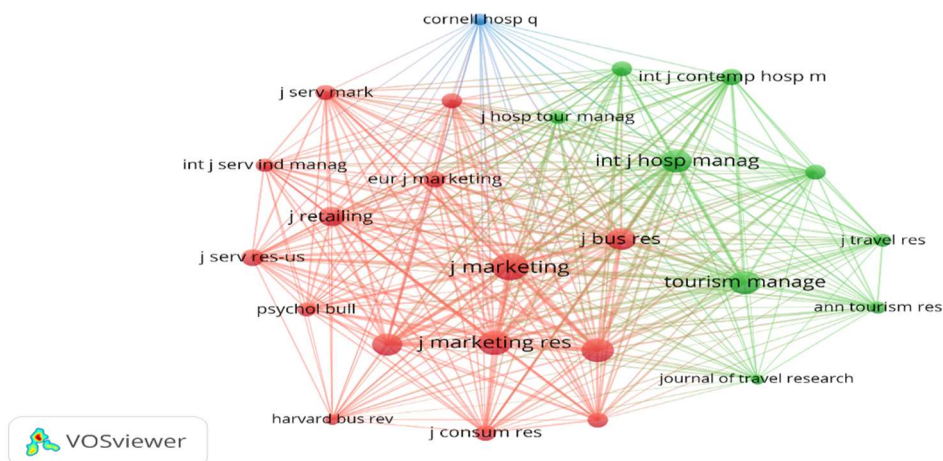
Figure 3.25 - Co-citation network of author for documents



Legend: own elaboration | Software: VOSviewer

Network visualization of co-citation analysis of journals for journals (figure 3.26) 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.

Figure 3.26 - Co-citation analysis of journals for journals



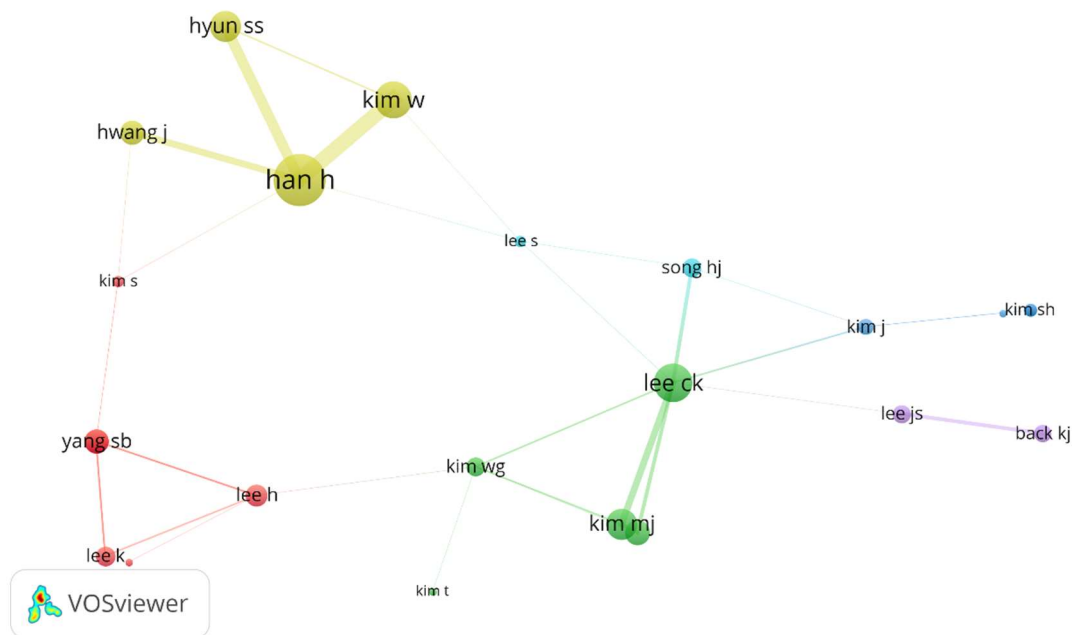
Legend: own elaboration | Software: VOSviewer

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

Figure 3.27 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.

Figure 3.27 - Network visualization of international collaboration between authors

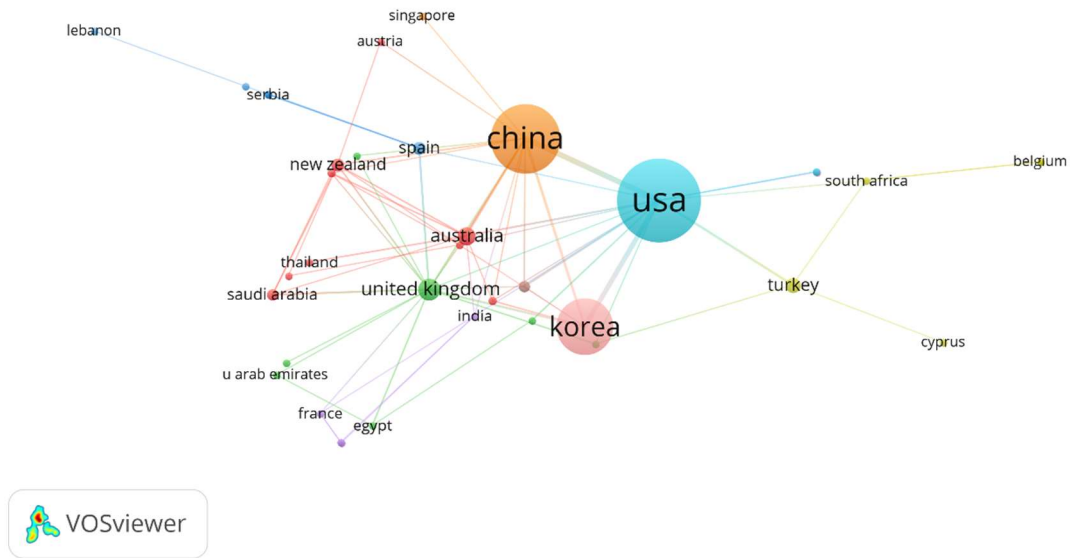


Legend: own elaboration | Software: VOSviewer

The list of countries is determined based on the number of publications in co-authorship. In the visualization map (figure 3.28), 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.

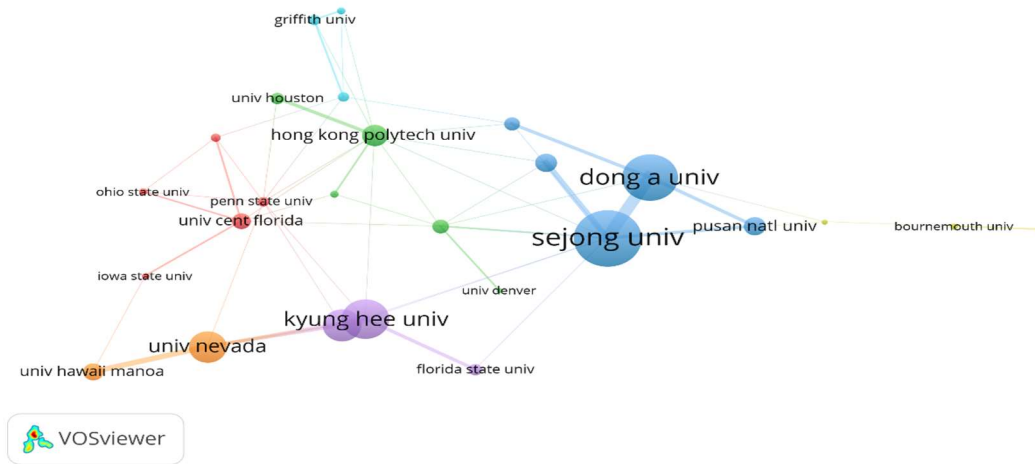
Figure 3.28 - Network visualization of international collaboration between countries



Legend: own elaboration | Software: VOSviewer

As for collaboration between institutions (figure 3.29), 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).

Figure 3.29 - Network visualization of the international collaboration between institutions



Legend: own elaboration | Software: VOSviewer

3.4 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 (Table 3.IX) 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. 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 & Gómez-Calvet, 2020), Airbnb with 2.26 (Andreu, Bigne, Amaro, & Palomo, 2020), but higher than “Revenue Management in Airline” with 1.85 (Raza, Ashrafi, & Akgunduz, 2020), and “Information Technologies” with 0.71 (Khaparde & 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 & Mabe, 2015). Nowadays, there is a growing interest in the issue of trust.

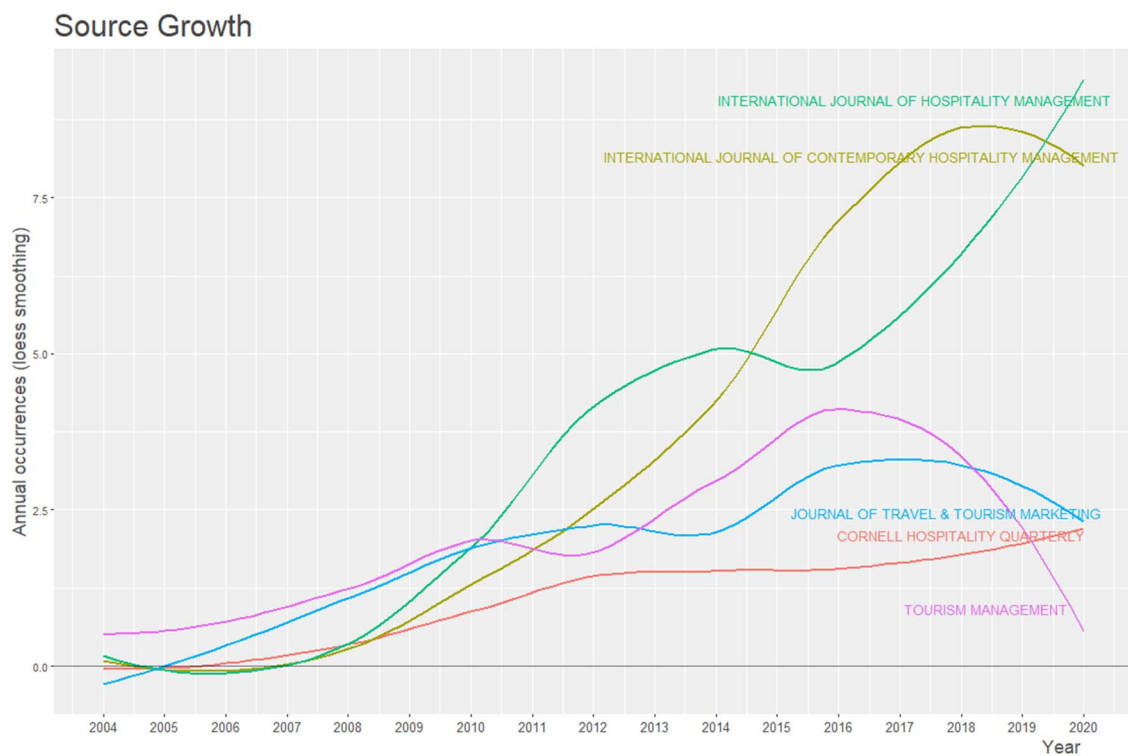
The World Economic Forum in Davos 2019 introduced trust as a variable with a substantial impact on business value. Discussed and analyzed as a strategic component or a competitive advantage factor, the importance of trust was globally accepted. Today, the new “industrial revolution 4.0” is an economic 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 unimaginable scales. The factorial analysis - figure 3.22 - 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 (Figure 3.30). 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.

Figure 3.30 - Source Growth



Legend: own elaboration | software: biblioshiny

From the results obtained on citations [08], 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 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.VII), 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 [02]. The collaboration network [05] shows a predominance of the USA, which collaborates with more countries and shows Korea’s significant international collaboration role. On the other hand, the 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 (Lotka, 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.

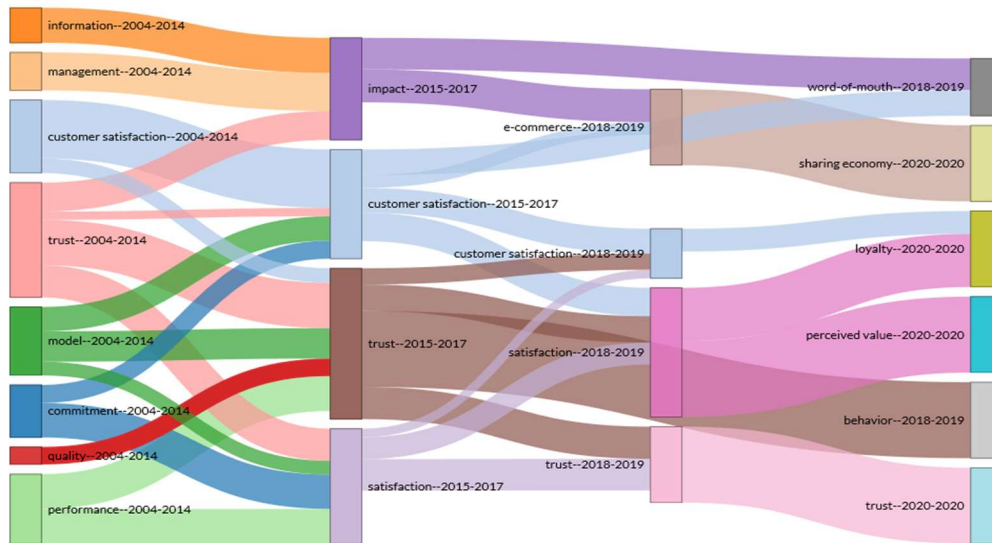
Trust trends are visible through the keywords [O7] used by researchers to index articles and the frequency with which they co-occur with other authors and articles. The authors' keywords trust, satisfaction, and loyalty have the highest number of co-occurrences, in addition to connections with other keywords. Over the years, the keywords' accumulated growth curve shows trust's weight, accompanied by words associated with satisfaction, loyalty, and service quality - figure 3.23. These results corroborate the literature, such as the European Customer Satisfaction Index (ECSI), used to assess service quality, loyalty, customer satisfaction, and trust (Askariazad & Babakhani, 2015; Bayol, de la Foye, Tellier, & Tenenhaus, 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, Nguyen, & Marshall, 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 figure 3.31, 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, Jackson, Sprigg, & Whybrow, 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 – 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 & 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, Pinto, and Mendes (2017) concluded that long-term memory could influence perceived value affecting the loyalty to the destination.

Figure 3.31 - Keywords-plus evolution



Legend: own elaboration | software: biblioshiny

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.

Table 3.IX - 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.

Number	Objective	Findings Summary
[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 Cent Florida (3); Kyung Hee Univ (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).

Number	Objective	Findings Summary
[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).
	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

3.4.1 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.

3.5 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.

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.

3.6 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.

3.7 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.

Declaration of 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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Author agreement

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CHAPTER 4 – STUDY 3

A BIBLIOMETRIC ANALYSIS OF SERVICE CLIMATE AS A SUSTAINABLE COMPETITIVE ADVANTAGE IN HOSPITALITY³

Abstract

The aim of this study is to provide a systematic literature review and map the service climate in hospitality in order 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. In total, these represent 3519 customers and 23068 employees, and all include women and men. The studies were carried out mainly in Asia. The research trend topics showed that performance is one of the most decisive variables, and keywords such as service climate, performance, antecedents, and perceptions are closely related. Finally, it is essential to note that the new service climate trends are related to Industrial Revolution 4.0, Big data, and HR analytics.

KEYWORDS: *Service Climate, Sustainable, Competitive Advantage, Hospitality, Bibliometrics Analysis, Structures of Knowledge.*

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4.1.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 (Mittal, Han, & Westbrook, 2018), healthy and sustainable new employment and leadership models are emerging. For the World Economic Forum, an accelerating workforce reskilling is vital 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”⁴ (*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 (Voola, Carlson, & West, 2004). According to the resource-based view of organizations (J. B. Barney, 2001a), competitive advantage is dependent on the ability to develop mechanisms to isolate and protect intangible assets from imitation, including casual ambiguity, complexity, path dependency, and legal barriers (Dierickx & Cool, 1989; Lippman & Rumelt, 1982; Reed & DeFillippi, 1990) 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 (J. B. Barney & Wright, 1998) because as competing organizations are unable to copy or imitate the

⁴ Portuguese Priberam Dictionary [online], 2008–2021, <https://dicionario.priberam.org/competitivo> [search 20-03-2021]

behaviours, skills, and attitudes of engaged and committed employees who prioritize the organization's service quality (Hitt, Bierman, Shimizu, & Kochhar, 2001).

According to Schneider (1973), organizational climate refers to employees' shared perceptions regarding the work behaviours encouraged, supported, and rewarded in a particular organizational setting. It has its foundations in the psychological distance and relative potency proposed by Lewin (1951) and appears in the field of organizational studies (Litwin & Stringer, 1968; Tagiuri, Litwin, & Barnes, 1968). Climate is a construct focusing on a specific referent (Schneider et al., 1998). Over the years, a series of climate-related constructions have emerged, including service climate (Schneider, Parkington, & Buxton, 1980), security climate (Hofmann & Stetzer, 1996), innovation climate (N. R. Anderson & West, 1998), and initiative climate (Raub & Liao, 2012).

Service climate is the basis of sustainable competitive advantage, a unique intangible asset that is challenging to build and impossible to replicate (Bowen & Schneider, 2014). Schneider et al. (1998) 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 (Ployhart et al., 2011), related to customer experiences, and consequently, to financial and commercial performance. Ployhart et al. (2011) explained service climate's inimitability through J. Barney (1991) 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 (J. Barney, 1991; J. B. Barney, 2001a; Bowen & Schneider, 2014).

To discuss the future of service climate in hospitality as a sustainable competitive advantage, it is essential that initial criteria are identified based on literature review. Literature reviews have an important part when it proves necessary to synthesize available scientific information or describe the state of the art. (Aria & Cuccurullo, 2017). In order to do so, one of the processes is by means of bibliometric approach, a methodical and objective procedure, based on statistical techniques (Diodato & Gellatly, 2013), which has the advantage of being clear reliable and easy to reproduce (Aria et al., 2020). In this

approach, it is also helpful to carry out network visualization to analyse the social, intellectual, and conceptual structure of knowledge (Cuccurullo et al., 2016).

This paper aims at reviewing and compiling, with the support of bibliometric techniques, the scientific literature in the field of hospitality, specifically related to service climate. This includes analysing the evolution and trends of the research field [Objective 1, O1], analysing the origin and evolution of scientific production (by country [O2], author [O3], institution [O4], and collaboration [O5]), as well as the distribution of publications by source [O6], and finally to classify and analyse the content of articles based on keywords [O7], citations [O8], and instruments [O9].

4.1.1. Service climate in hospitality

Hotels must be learning organizations (Rebelo & Gomes, 2011) in order to promote new forms of employment associated with the implementation of new management models based on holacracy (Krasulja, Radojević, & Janjušić, 2016) and sociocracy (Eckstein, 2016). 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 customers base and therefore to sustained financial returns (Solnet & Kandampully, 2008).

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 (Johanson & Woods, 2008). 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 they are intended to. 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, 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: it is its 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 behaviours and attitudes to provide a service that satisfies customers' needs and expectations, according to their procedures, innovating and surprising customers (Schneider & Bowen, 2010). Building and sustaining a competitive advantage in hospitality requires an untouchable strategy focused on customer service (Michel, Kavanagh, & Tracey, 2013).

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 (Mittal et al., 2018). A weak service climate does not create value and does not differentiate hotels.

Literature relates service climate with customer experiences, namely service quality (Schneider et al., 1998), customer satisfaction (Y. Q. He, W. L. Li, & K. K. Lai, 2011), customer trust (M. Sadeghi, Zandieh, Mohammadi, Yaghoubijarboneh, & Vosta, 2017), and customer loyalty (Salanova et al., 2005), influencing the organization's performance (Susskind, Kacmar, & Borchgrevink, 2018b) and leading to higher profits (Solnet, Ford, & McLennan, 2018). The contact employee and personal service moderates the link between service climate and these customer perceptions (Bowen & Schneider, 2014).

Consistent with the Role Theory (Solomon, Surprenant, Czepiel, & Gutman, 1985), service-based organizations, customers, and contact employees have a 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 behaviours that should result in desirable outcomes (Solomon et al., 1985; Susskind, Kacmar, & Borchgrevink, 2018a). Related to the Role Theory, Susskind, Kacmar, and Borchgrevink (2003) showed that a positive service climate is connected to customers' perceptions/attitudes and financial performance. Hong et al. (2013) link 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 service climate (Chathoth, Mak, Jauhari, & Manaktola, 2007) and employee's perceived satisfaction. Simultaneously service climate directly influences customer trust (M. Sadeghi et al., 2017) and financial performance (Susskind et al., 2018a). 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. If hotels segment customers by trust, they can use revenue management to set prices, increase revenue, as well as financial performance (Palácios, de Almeida, & Sousa, 2021).

There is no consensus in literature on the service climate dimensions. Bowen and Schneider (2014) identify leadership, HRM practices, and support as antecedents of service climate. Leadership behaviours, such as servant leadership (D. Elche, P. Ruiz-Palomino, & J. Linuesa-Langreo, 2020; Linuesa-Langreo, Ruiz-Palomino, & Elche-Hortelano, 2017) or ethical leadership (Yesiltas & Tuna, 2018), 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 (Kloutsiniotis & Mihail, 2020) 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 (Bohlander & Snell, 2007). Support can be actions that sustain and reward the delivery of a quality service, namely managerial or coworker support (Dusek, Clarke, Yurova, & Ruppel, 2016) or resources that remove obstacles at work, namely system support or work facilitation (Bowen & Schneider, 2014; Schneider et al., 1998). 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 (Salanova et al., 2005). In conclusion, employee engagement is a foundation for service climate (Bowen & Schneider, 2014).

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, service quality, satisfaction, and loyalty (Stamenkov & Dika, 2015) and discusses the impact of HR quality and service education, service climate, and service innovation on sustainability (L. Li, Kung, Tsai, Liu, & Lu, 2018). 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.

4.2.Methodology

In order to defragment the available scientific literature 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 search/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 drawing a global image of knowledge from a statistical perspective, by means social, intellectual, and conceptual structures of knowledge, was focused on science mapping (Cuccurullo et al., 2016). 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 what science is talking about, which are the main 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 do an author's studies on service climate influence research?; Finally, the social structure, explaining the interaction between authors, institutions, and countries, leads us to RQ3: What kind of interactions do authors, institutions, and countries have with each other in studies of service climate? (Aria & Cuccurullo, 2017)

4.2.1. Data collection and search strategy

The present search was not limited by sources in order to ensure 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.

A connection was made with a virtual private network (VPN) belonging to the University of the Algarve 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, were 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 the EndNote X8.2 software which also was used to reject identical publications and manage the database.

The suggestion of excluding the risk of bias assessment from hospitality and tourism reviews, as per Pahlevan-Sharif et al. (2019), was followed.

4.2.2. Data analysis and visualization

The application and presentation of this analysis followed the methodology reported in Sweileh et al. (2017), and was extended to include content analysis. The Bibliometrix R package 3.0.1 in the Biblioshiny version (Aria & Cuccurullo, 2017), an open-source statistical R software, to produce a data overview, 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, 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 (Van Eck & Waltman, 2010) was chosen, as it uses a unified structure for mapping and clustering (Waltman, Van Eck & Noyons, 2010).

4.3. Results and discussion

4.3.1. Retrieved literature

A total of 435 publications was obtained from a search for the term "service climate" [AllFields = ("service climate")] in the Web of Science (WoS), we obtained. After applying the eligibility criteria, combined with the "booleans", a total of 70 publications was obtained. After removing proceedings papers (n = 1), early access publications (n = 3), and review articles (n = 3), there remained 63 articles (Table 4.X).

Table 4.X - Number of articles found per search

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

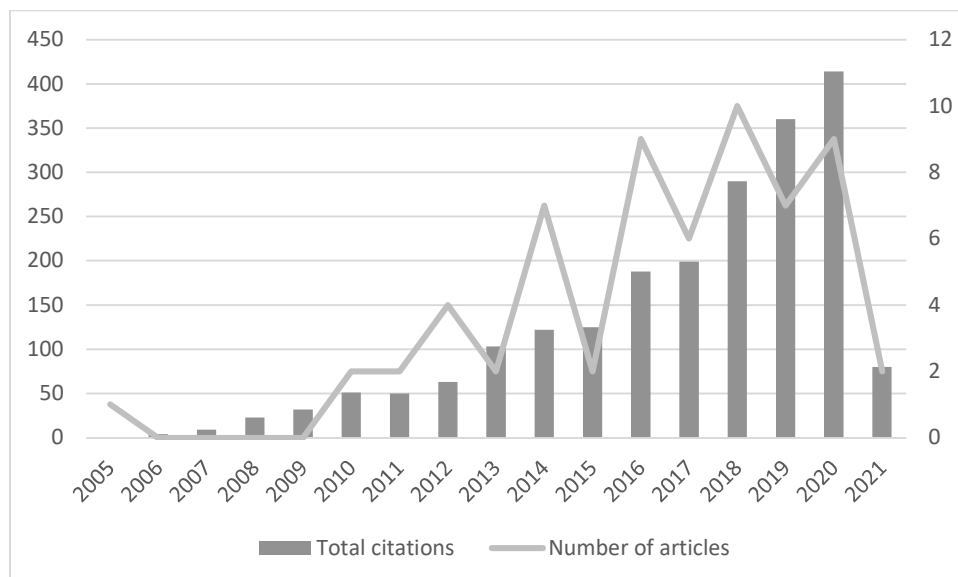
Legend: own elaboration | Source: WoS | software: excel

The results show that from 2005 to 2021 there was an apparent increase in the number of publications [O1], citations (figure 4.32), authors, and collaborations, with a total growth rate of 5.95% which is congruent with the general 3% growth in publications observed annually in all scientific disciplines.

The results show that from 2005 to 2021 there was an apparent increase in the number of publications [O1], citations (figure 4.32), authors, and collaborations, with a total growth rate of 5.95% which is congruent with the general 3% growth in publications observed annually in all scientific disciplines. 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 (Ware & Mabe, 2015). However a growing interest in the issue of service climate as a competitive

advantage, and in its role both at an individual level (Jiang et al., 2019) as at an organization level (D. Elche et al., 2020), 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 are Hospitality Leisure Sport Tourism, Management, and Business. The year 2014 was identified as the moment which the annual growth of scientific production increased, with seven articles published (11.11%). 2018 was the year with 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 4.32 - Annual scientific production



Legend: own elaboration | Source: WoS | software: excel

4.3.2. Sources

As for objective [O6], the results displayed 63 articles issued by 30 journals. A Bradford's Law analysis (Brookes, 1969; Lockett, 1989), showed the existence of three clusters: a central zone constituted by only two journals, which published 22 articles (34.92%), an intermediate zone composed by 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 citations") were the *International Journal of Hospitality Management*, and the *International Journal of Contemporary*

Hospitality Management, both with 11 articles, with a total of 474 citations, which represented 22.43% of the total citations (TC = 2113). The most cited source was the *Journal of Applied Psychology*, with 1097 citations of two articles, representing 51.92% of the total citations (Table 4.XI).

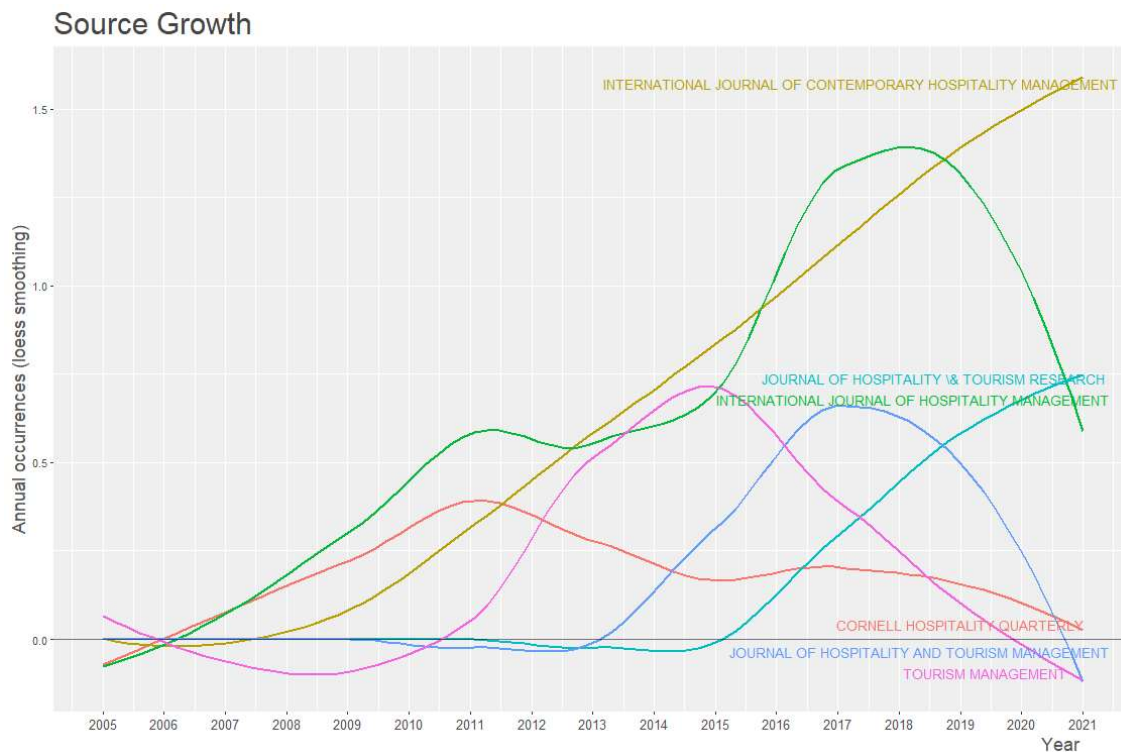
Table 4.XI - Source impact

Source	h_index	g_index	m_index	TC	NP	PY_start
International journal of hospitality management	7	11	0,5833333333	283	11	2010
International journal of contemporary hospitality management	6	11	0,5454545454	191	11	2011
Journal of hospitality and tourism management	3	3	0,5	40	3	2016
Tourism management	3	3	0,375	189	3	2014
Cornell hospitality quarterly	2	3	0,1666666667	70	3	2010
Frontiers in psychology	2	2	0,4	13	2	2017
Journal of air transport management	2	2	0,4	49	2	2017
Journal of applied psychology	2	2	0,117647059	1097	2	2005
Journal of services marketing	2	2	0,25	15	2	2014
Service industries journal	2	2	0,3333333333	17	2	2016
Journal of hospitality & tourism research	1	2	0,25	5	3	2018
Anales de psicología	1	1	0,1	9	1	2012
Asia pacific journal of tourism research	1	1	0,142857143	21	1	2015
European journal of work and organizational psychology	1	1	0,090909091	10	1	2011
International journal of hospitality & tourism administration	1	1	0,25	20	1	2018
International journal of management science and engineering management	1	1	0,2	6	1	2017
Iranian journal of management studies	1	1	0,1666666667	5	1	2016
Journal of east-west business	1	1	0,1666666667	2	1	2016
Journal of hospitality and tourism insights	1	1	0,3333333333	2	1	2019
Journal of hospitality marketing & management	1	1	0,3333333333	4	1	2019
Journal of service theory and practice	1	1	0,5	3	1	2020
Journal of sustainable tourism	1	1	0,142857143	27	1	2015
Journal of travel & tourism marketing	1	1	0,1666666667	1	1	2016
Land use policy	1	1	0,3333333333	8	1	2019
Managing service quality	1	1	0,1	11	1	2012
Marine mammal science	1	1	0,125	13	1	2014
Spanish journal of psychology	1	1	0,125	2	1	2014
Journal of interdisciplinary mathematics	0	0	0	0	1	2017
Journal of retailing and consumer services	0	0	0	0	1	2020
Sustainability	0	0	0	0	1	2021

Legend: TC-Total Citation | NP-Number of publications | PY_start-Year of the first publication | Own elaboration | Source: R Studio biblioshiny | Software: R Studio biblioshiny

Currently, the *International Journal of Contemporary Hospitality Management* is the main driver, and since 2008 it has presented (in annual terms) a constant increase in the number of annual publications. In Figure 4.33, we can see the dynamics of growth (per year) of the six most relevant sources. Until 2014, the *Tourism Management* had an active role in the field of the present study, although between 2015 and 2018, the *International Journal of Hospitality Management* took over, with a rise in publications (Figure 4.33). In 2015, there seemed to be a possible inverse relationship between the number of articles published in the *Tourism Management* and the *Journal of Hospitality and Tourism Research*. After 2018, the shape of the curve of the *International Journal of Hospitality Management* seemed to reflect that of the *Journal of Hospitality and Tourism Management*, since 2017 with a downward trajectory.

Figure 4.33 - Growth dynamic



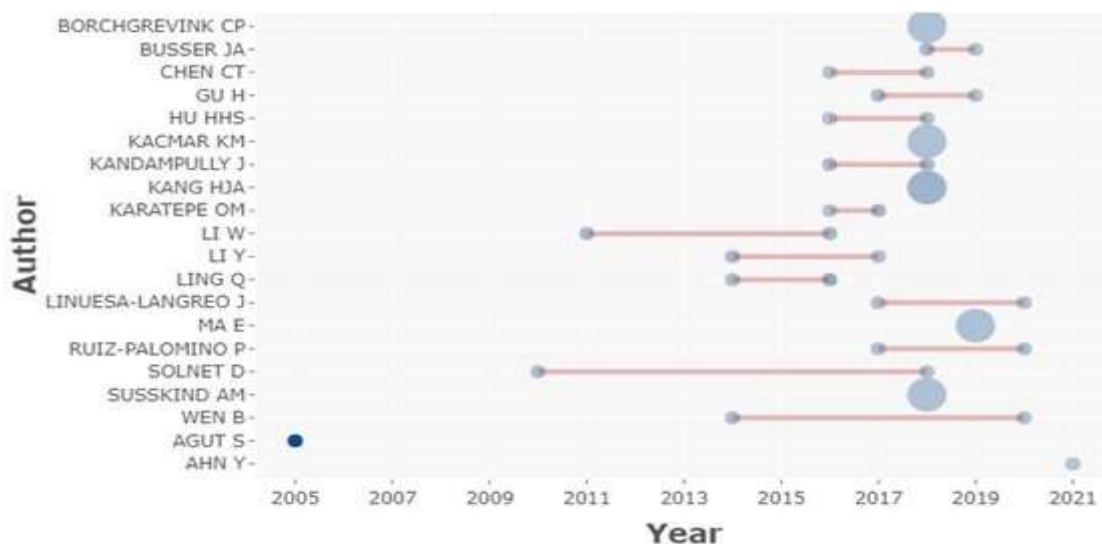
Legend: Source growth, per year | own elaboration | Source: R Studio biblioshiny |
Software: R Studio biblioshiny

4.3.3. Authors

A total of four articles (6.35%) were of single authorship, and a total of 59 publications (93.65%) were of multiple authorship. 163 authors with multiple authors

were identified, representing a collaboration index of 2.76 (Elango & Rajendran, 2012; Koseoglu, 2016). Over the years, the Collaboration Index (CI) was steady, without significant variations, and the highest value was 3.44 (2013/2015). This CI is probably a result of the fact that authors work in multidisciplinary and interdisciplinary teams, once this field covers a number of diverse topics related to the social sciences, namely, within the scope of economic and management sciences, such as organizational culture (Kao, Tsaur, & Huang, 2020), ethics (Schwepker, Dimitriou, & McClure, 2019), and leadership (Huang, Li, Qiu, Yim, & Wan, 2016; Linuesa-Langreo et al., 2017). Another reason may be related to better and more accessible collaboration among researchers from different institutions and countries. 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 (Lokta, 1926) 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 have more than five-year longevity in scientific production (Figure 4.34).

Figure 4.34 - Top-authors production over the timespan



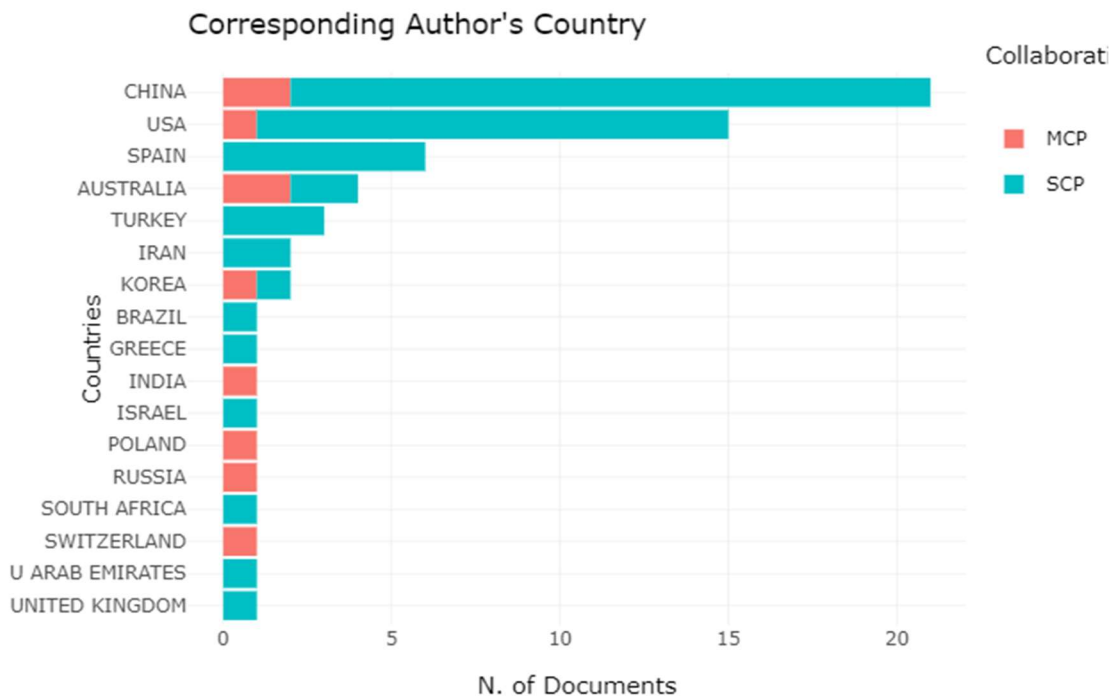
Legend: authors/years | own elaboration | Source: R Studio biblioshiny | Software: R Studio biblioshiny

The single author with the most citations is Chia-Jung Chou, with 112 citations 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 citations are Margarita Salanova, Sonia Agut, and Jose Peiro, followed by Steffen Raub and Hui Liao with 122 citations 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 scientific production longevity (Figure 4.34), is known for his research 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. However, these results include only articles in the data analysed and indexed to WoS in February 2021. Had other indexes been used, such as Scopus, the results would have differed.

4.3.4. Countries

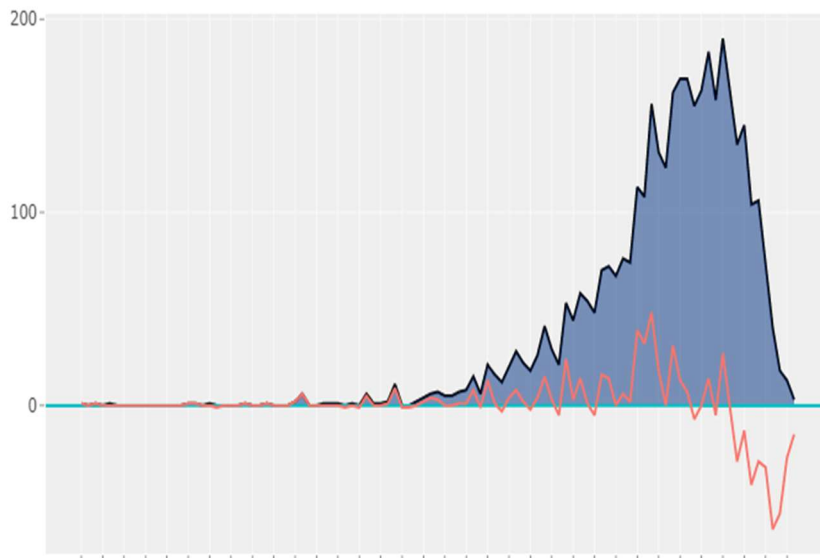
Of the total of 17 countries [O2], the ones with the most citations are Spain (1010) and China (595), representing 47.8% and 28.1%, respectively. Spain occupies the first position in terms of average citations per year, with 168 citations/year, and Switzerland is in second place with 122 citations/year. Figure 4.35 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.

Figure 4.35 - 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

Figure 4.36 - 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

4.3.5. Citations

From the results obtained on citations [08], 63 articles received 2113 citations, with an average of 33.54 citations per article and 3.58 citations per article/year. As a matter of fact, this is not a high average compared to other science fields, such as environmental sciences, which has an average of 159 per article. However, it is higher than language, linguistics, social issues, and demography (Patience et al., 2017).

The total number of citations 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 citations per year is 132.06. The publication year with the highest average number of citations was 2005 with 60.94, and the lowest was 2019 with 1.57 (Table 4.XII).

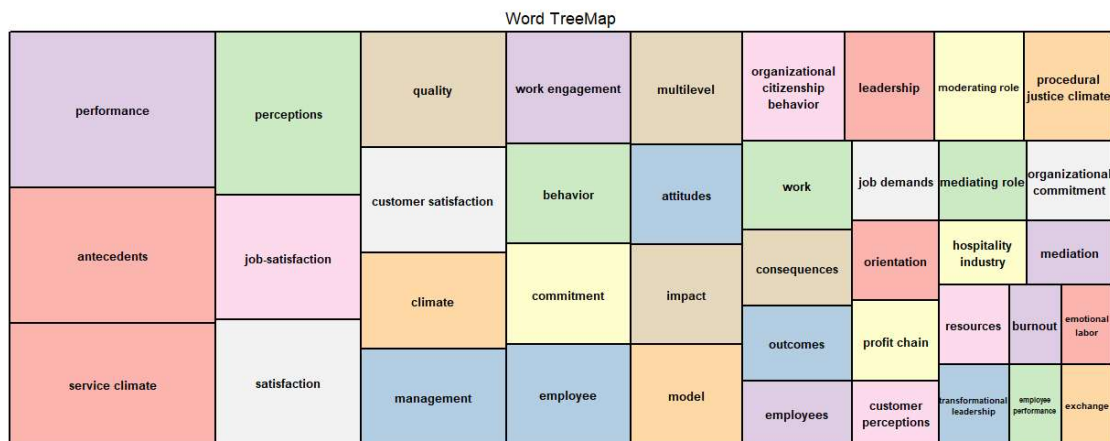
Table 4.XII - Citation impact per year

Year	Total citations TC (63 articles)	Number of articles	MeanTCperArt	MeanTCperYear	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: R Studio biblioshiny

Table 4.XIII 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 et al. (2005) received the highest number of citations, 975, with an average of 57.35 citations 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 (Hackman & Oldham, 1980) recognized this motivational facet of resources. According to the Conservation of Resources Theory (Hobfoll, 2001), 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 coworkers to have the same patterns of motivation and behaviour (George, 1990; Kahn, 1990; Salanova et al., 2005). As an antecedent of service climate, the connection between HRM practices and employees' behaviours can be explained by integrating the Social Information Processing Theory (Salancik & Pfeffer, 1978) and the Social Exchange Theory (Blau, 1964). According to these theories, organizational practices are perceived and interpreted by employees, who subsequently adopt specific behaviours based on the norm of reciprocity and use the information in decision making regarding further actions (Tang & Tang, 2012). Two articles were found (Kloutsiniotis & Mihail, 2020; Tang & Tang, 2012) on the role of service climate in relationship with high-performance HRM practices and Organizational Citizenship Behavior (OCB) in hospitality. Tang and Tang (2012) 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 (Appelbaum, Bailey, Berg, Kalleberg, & Bailey, 2000) in order to provide satisfying services to customers.

Figure 4.37 - Word TreeMap: Keywords-Plus



Legend: Top-40 Keywords-plus | own elaboration | Source: R Studio biblioshiny |
Software: R Studio biblioshiny

Figure 4.36 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. (2014), this method analyses 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 were grouped into three categories: theories, methodologies, and instruments. In 1960, the norm of reciprocity (Gouldner, 1960) was the preliminary approach to the Social Exchange Theory (Blau, 1964). In 1977, the historical milestone was associated with the Social Learning Theory (Bandura & McClelland, 1977) and the Social Information Processing Theory (Salancik & Pfeffer, 1978). In 2000, the Multilevel Theory was identified as a historical root (Bliese, 2000; Klein & Kozlowski, 2000). The two-step approach to modelling structural equations (J. C. Anderson & Gerbing, 1988), multiple regression (Aiken, West, & Reno, 1991), 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 (Hartline & Ferrell, 1996), are three milestones in terms of methodology. The year 1998 was fundamental for research, with two reference instruments to measure organizational service climate. Lytle, Hom, and Mokwa (1998) developed a SERV * OR scale with ten dimensions to measure service orientation. In the same year, Schneider et al. (1998) 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 et al. (2005), 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 4.38 - WordCloud: Author's Keywords



Legend: Top-40 Author's Keywords | own elaboration | Source: R Studio biblioshiny |

Software: R Studio biblioshiny

4.3.6. Keywords

The 63 articles were indexed with 241 author keywords and 266 KeyWords Plus terms by WoS. KeyWords Plus terms prove to be more effective than author keywords for bibliometric analysis when investigating knowledge structures but less comprehensive in representing the content of an article (Zhang et al., 2016).

Figure 4.38 presents the WordCloud of the top 40 author keywords. Service climate trends are visible through the keywords [O7] used by authors to index articles and the frequency with which they co-occur with other authors and articles. 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. For the analysis of the main KeyWords Plus terms, one TreeMap (Figure 4.37) was created, with the 40 most used words, which was useful for quickly understanding the critical terms and comparing their different origins.

Table 4.XIII - Top-10 cited articles

AU	TI	PY	Total Citations	TC per Year	SO
Salanova M;Agut S;Peiro Jm	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 Cj	Hotels' Environmental Policies And Employee Personal Environmental Beliefs: Interactions And Outcomes	2014	112	14	Tourism Management
Tang Tw;Tang Yy	Promoting Service-Oriented Organizational Citizenship Behaviors In Hotels: The Role Of High-Performance Human Resource Practices And Organizational So	2012	95	9,5	International Journal Of Hospitality Management
Chang Kc	Effect Of Servicescape On Customer Behavioral Intentions: Moderating Roles Of Service Climate And Employee Engagement	2016	66	11	International Journal Of Hospitality Management
Ling Q;Lin M;Wu X	The Trickle-Down Effect Of Servant Leadership On Frontline Employee Service Behaviors And Performance: A Multilevel Study Of Chinese Hotels	2016	64	10,667	Tourism Management
He Y;Li W;Lai Kk	Service Climate, Employee Commitment And Customer Satisfaction Evidence From The Hospitality Industry In China	2011	56	5,091	International Journal Of Contemporary Hospitality Management
Kralj A;Solnet D	Service Climate And Customer Satisfaction In A Casino Hotel: An Exploratory Case Study	2010	48	4	International Journal Of Hospitality Management
Way Sa;Sturman Mc;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 Hospitality Management

Legend: TI – Title | AU – Authors | SO – Source | PY – Year | TC – Total citation | own elaboration | Source: R Studio biblioshiny | software: R Studio biblioshiny

Over the years, the shape of the curve of KeyWord Plus accumulated growth shows performance weight, accompanied by words associated with antecedents, perceptions, service climate, and job satisfaction (Figure 4.40). These results corroborate recent literature, such as culture as an antecedent of service climate (Kao et al., 2020), job satisfaction, and organizational commitment (Wong, Ma, Chan, Huang, & Zhao, 2019), and service climate and empowerment for customer service quality (Pham Thi Phuong & Ahn, 2021).

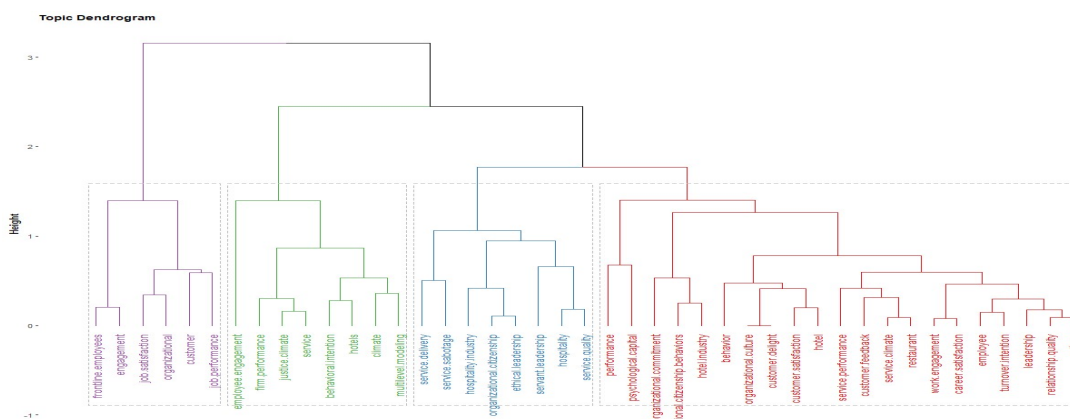
4.3.7. Structures of knowledge

To answer the research questions in this bibliometric analysis, three conceptual, intellectual, and social structures were visualized.

4.3.7.1. Conceptual Structure of Knowledge

The conceptual structure identifies the main themes in hospitality to map relationships between concepts and explores the different trends developed (Aria et al., 2020; Tijssen & Van Raan, 1989). To map the conceptual 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 (Garfield & Sher, 1993) are analysed.

Figure 4.39 - Topic Dendrogram: Author's Keywords

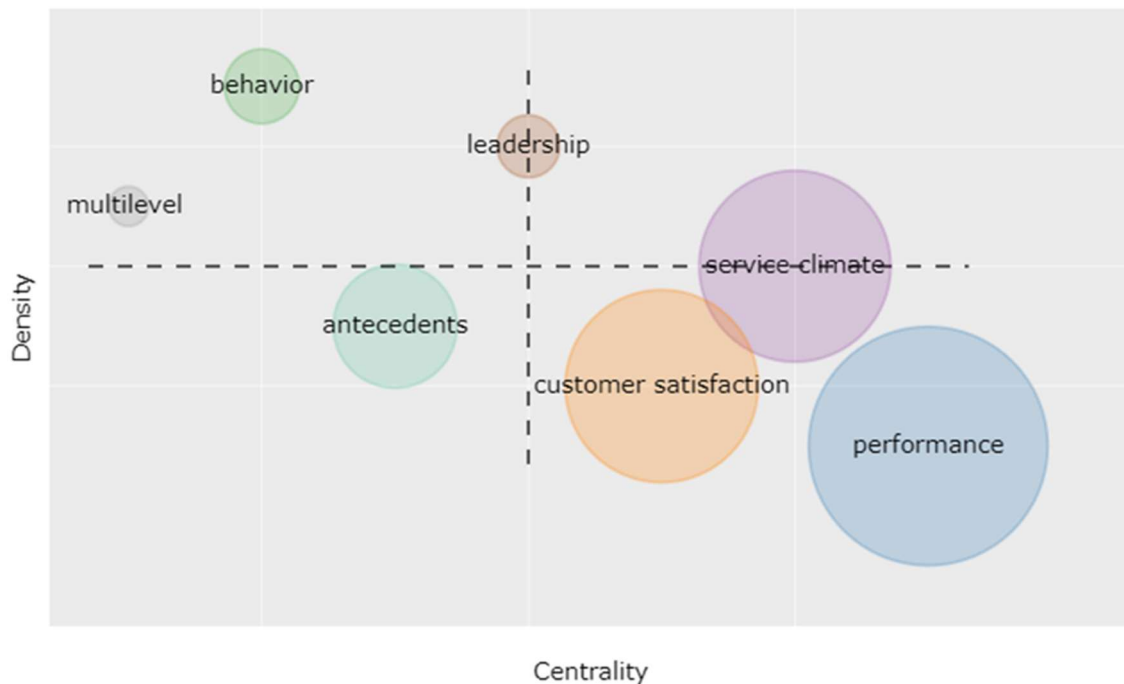


Legend: own elaboration | Software: R Studio biblioshiny

In the topic dendrogram (Figure 4.39), the four clusters of author keywords may be visualized, each one being represented in a different colour. 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.

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.

Figure 4.40 - Thematic Map: Keywords-plus



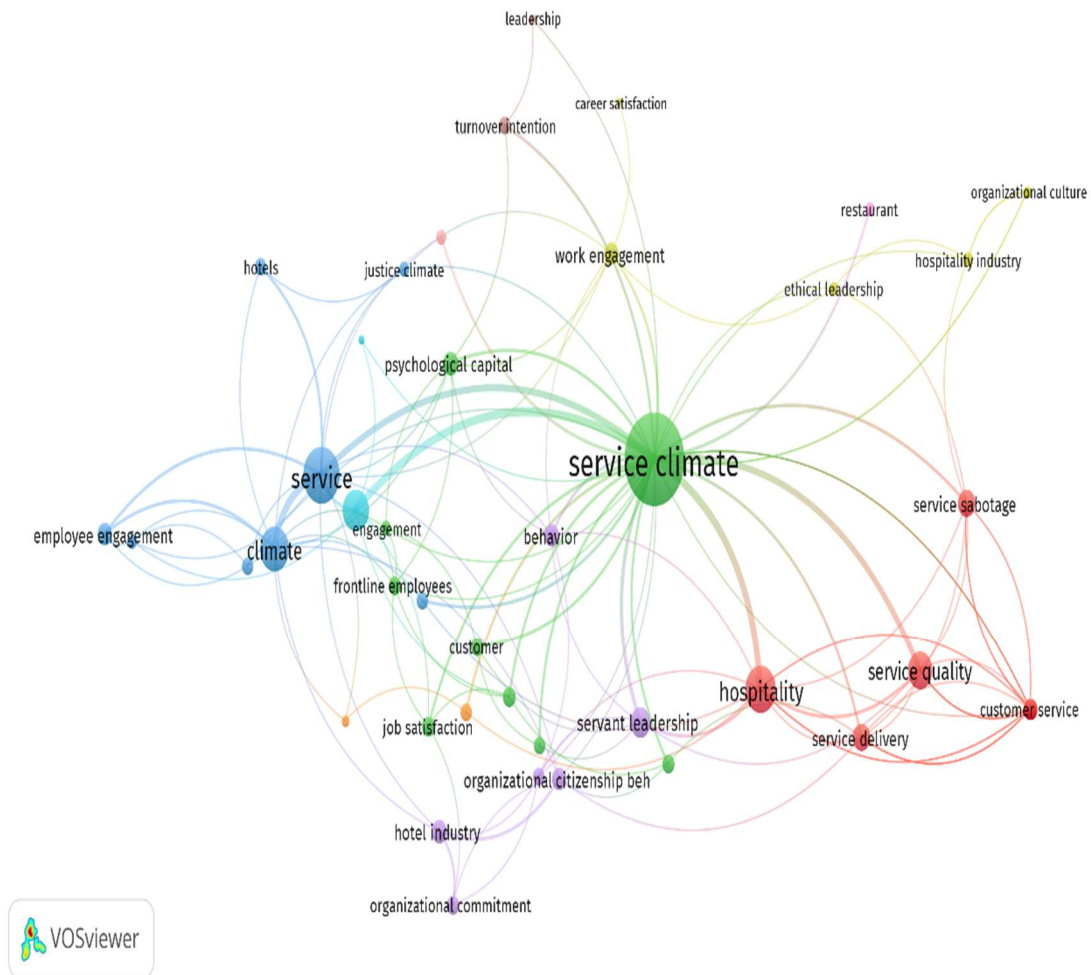
Legend: own elaboration | Software: R Studio biblioshiny

The co-occurrence network by author keyword (Figure 4.41) 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 note that the keyword service climate is associated with leadership, motivation, perceptions, and performance. Author keywords such as service quality, work engagement, hospitality, organizational citizenship behaviours, and customer satisfaction have a close relationship, and some of them coexist in the same articles.

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 read as the importance of the theme and density as a measure of theme developments (Cobo, López-Herrera, Herrera-Viedma, & Herrera, 2011). Through the analysis of the 266 KeyWords Plus terms, we developed one Thematic Map (Figure 4.41). 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.

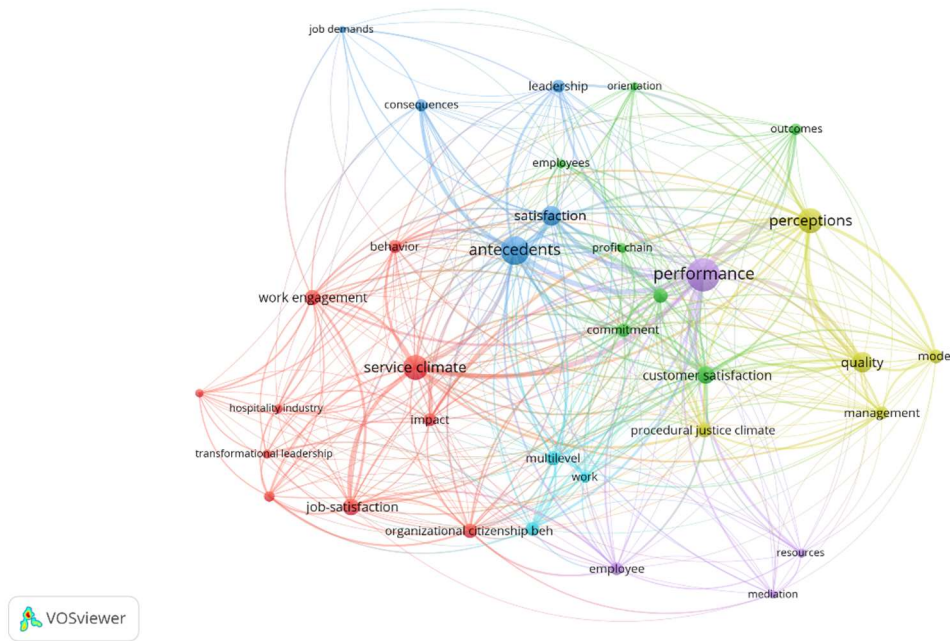
Figure 4.41 - Co-occurrence network: Authors Keywords



Legend: own elaboration | Software: VOSviewer

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 4.42), 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.

Figure 4.42 - Co-occurrence network: KeyWords Plus

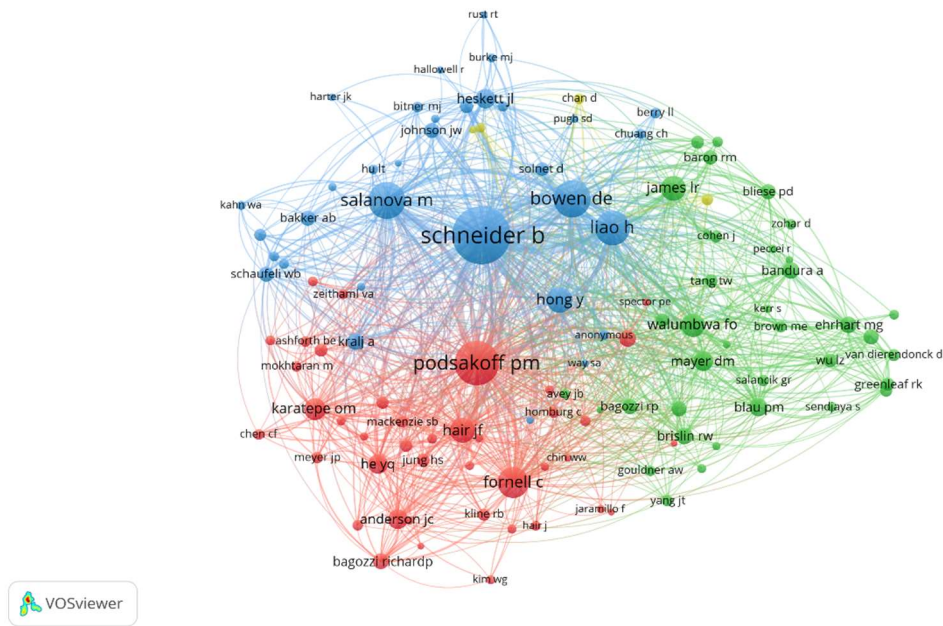


Legend: own elaboration | Software: VOSviewer

4.3.7.2. Intellectual structure of knowledge

The analysis of the intellectual structure of knowledge in the form of a co-citation network is the most common in bibliometrics. Two documents are said to be co-cited when both are mentioned in a third document and show relationships with the references. The 63 articles included in this study mention 3343 bibliographic references. In Figure 4.43, 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.

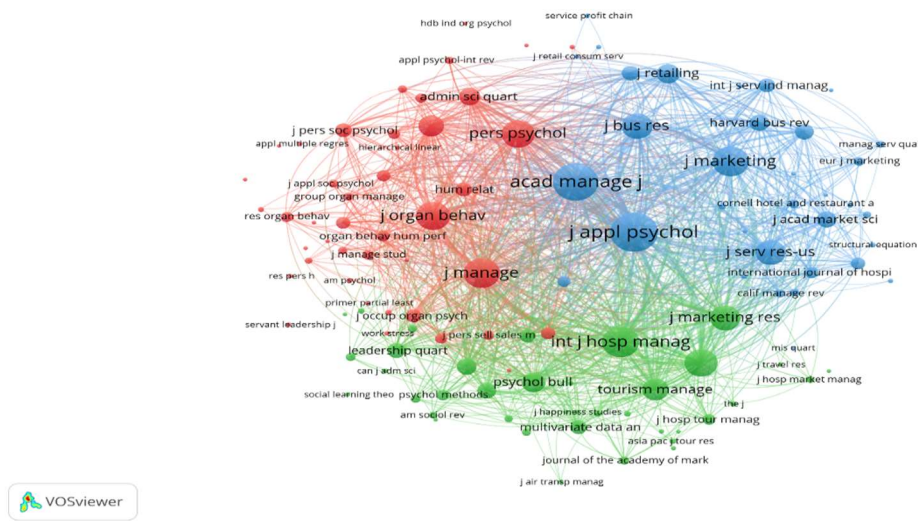
Figure 4.43 - Co-citation network: Authors



Legend:own elaboration | Software: VOSviewer

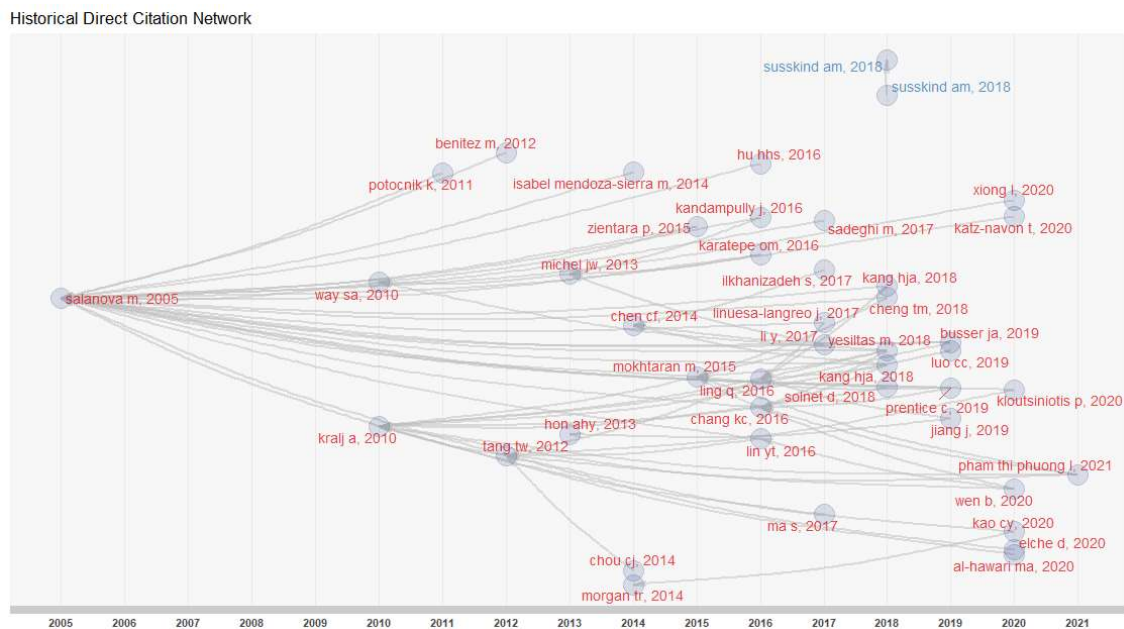
In figure 4.44, the network of co-citation analysis by journals that published the 3343 bibliographic references can be visualized. There are three clusters, in different colours, where the most important 115 sources are visible. The journals of each of these groups are commonly co-cited within it. The journals with the most impact are also co-cited by sources belonging to a cluster other than the one they belong to. 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 4.44 - Co-citation network: Sources



Legend: own elaboration | Software: VOSviewer

Figure 4.45 - Historiograph

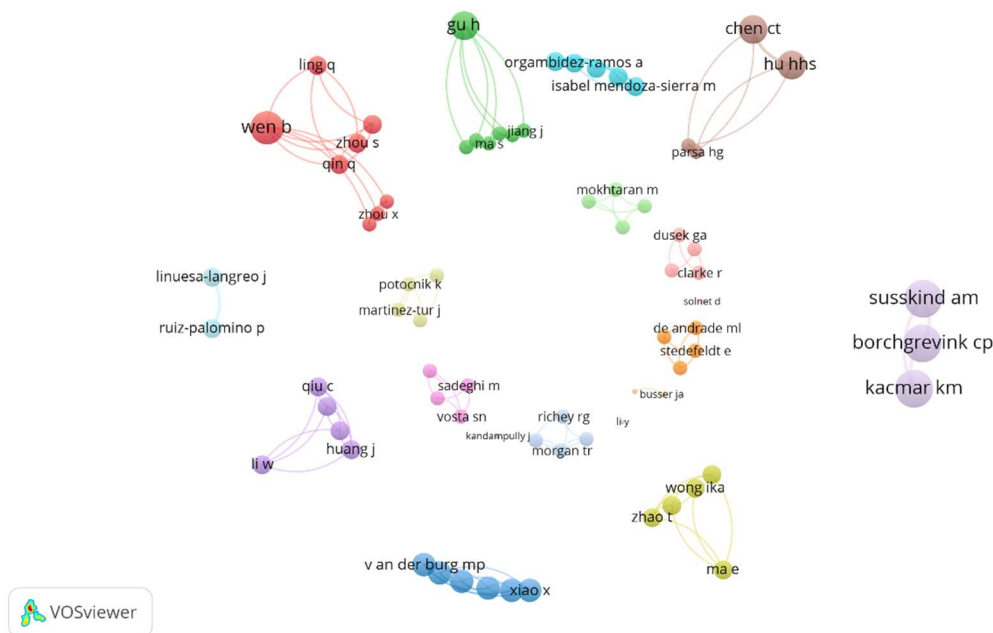


Legend: own elaboration | Software: R Studio biblioshiny

4.3.7.3. Social structure of knowledge

Figure 4.46 shows the authors collaboration network. The list of authors is determined based on the number of publications co-authored. Of the 167 authors, the map visualizes the 74 authors with the most collaborations, grouped into 19 different colours by cluster, with 120 links. The closest circles indicate authors with close research collaboration. The largest set of connected items consists of 10 authors. The figure 4.46 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" (Wen, Zhou, Hu, & Zhang, 2020), "How and When the Effect of Ethical Leadership Occurs? A Multilevel Analysis in the Chinese Hospitality Industry" (Qin, Wen, Ling, Zhou, & Tong, 2014), and "The Trickle-Down Effect of Servant Leadership on Frontline Employee Service Behaviours and Performance: A Multilevel Study of Chinese Hotels" (Q. Ling, M. Z. Lin, & X. Y. Wu, 2016).

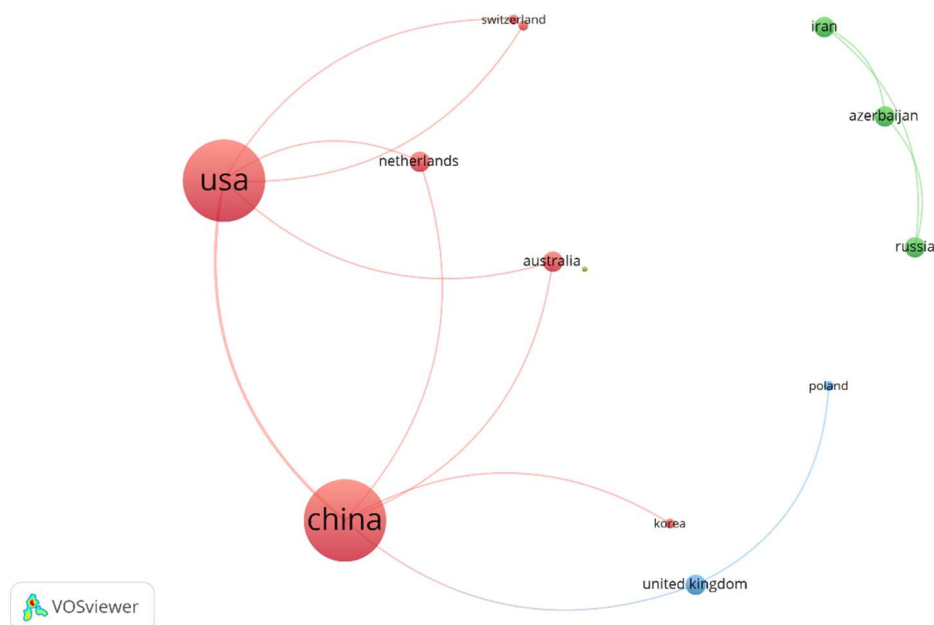
Figure 4.46 - Collaboration network: Authors



Legend: own elaboration | Software: VOSviewer

The list of countries is determined based on the number of publications co-authored. 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 set of connected countries consists of nine countries, in two clusters with 10 links (Figure 4.47). On analysing the country collaboration and international distribution of articles, it was found that China and the USA are the countries with the most significant number of publications (China has 33.3% and the USA 23.8%). Switzerland has 122 citations per article, higher than China (28.3) and very close to Spain (168.3). The collaboration network [O5] shows a predominance of the USA, which collaborates with more countries, such as Switzerland and India, and shows China's significant international collaboration role with the United Kingdom, the Netherlands, and Australia. A relationship is visible between Iran, Azerbaijan, and Russia, which is linked to an article by M. Sadeghi et al. (2017). One of the limitations of the present analysis was that the populations of the different countries were not compared. If this had been done, the results would have been different.

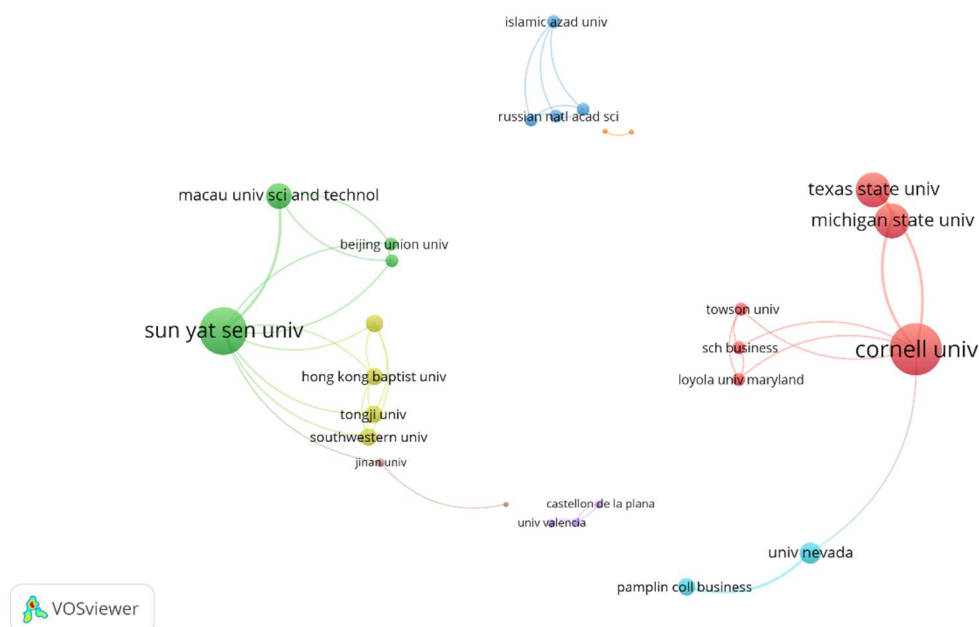
Figure 4.47 - Collaboration network: Countries



Legend: own elaboration | Software: VOSviewer

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 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 4.48). The relationship between Cornell University (USA), Michigan State University (USA), and Texas State University (USA) is associated with Susskind et al. (2018a;2018b). Michel et al. (2013) 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). C. Prentice, E. Ma, and I. A. Wong (2019) are linked to the Griffith University (Australia), and Wong et al. (2019) to the Macau University of Science and Technology (China), the Beijing Union University (China), the Beijing Union University (China), and the City University of Macau (China).

Figure 4.48 - Collaboration network: Institutions



Legend: own elaboration | Software: VOSviewer

4.3.8. Content analysis

In total, the studies represent 3519 customers and 23068 employees. The employees include 381 directors, 1402 managers, 1331 supervisors, and 19954 employees, of which 15793 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 are Chinese, American, and Spanish. Some samples from less well represented populations such as Russia (Dusek, Clarke, Yurova, & Ruppel, 2016), Iran (Mokhtaran, Fakharyan, Jalilvand, & Mohebi, 2015), Greece (Kloutsiniotis & Mihail, 2020), and Turkey (Yesiltas & Tuna, 2018) were found. Two qualitative studies (Kandampully, Bilgihan, & Zhang, 2016; Luo, Wang, & Tai, 2019) and one mixed study (Kao, Tsaur, & Huang, 2020); the rest were quantitative studies, of which 48% were based on a multilevel approach were identified. Of these, three were paired dyads (Gong, Wang, & Lee, 2020; Jiang, Gu, Dong, & Tu, 2019; Ling, Liu, & Wu, 2017), one was time-lagged (Al-Hawari, Bani-Melhem, & Quratulain, 2020), and the remainder were cross-sectional (Figure 4.45).

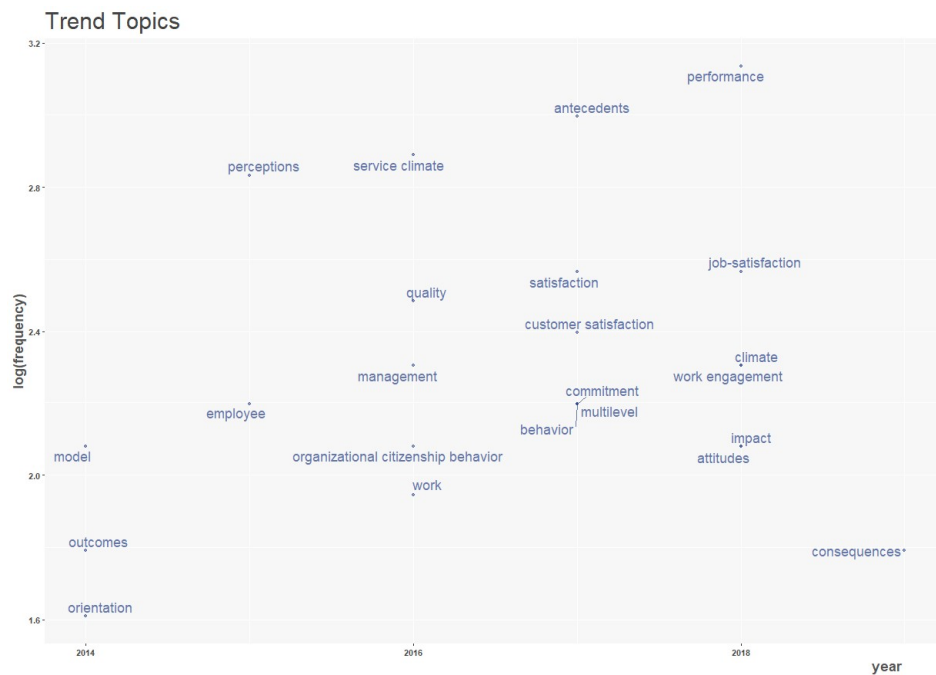
Of the 63 articles analysed, 29 (46%) mention the use of an instrument from Schneider, White, and Paul (1998); out of these, 25 articles (86%) refer the use of the generic measure GSCS (Global Service Climate Scale) and four articles (14%) state measurements through four dimensions. Of the 25 articles that mention the GSCS, 11 articles state the original seven-item version and nine the reduced four-item version, eight of which with origin in versions translated and validated into Spanish by Moliner, Carrasco, Martínez-Tur, and Marzo (2004), Salanova, Agut, and Peiro (2005), and Carrasco, Martínez-Tur, Peiró, and Moliner (2012).

Four articles mentioned the development of a specifically designed instrument (Dusek et al., 2016; He, Li, & Lai, 2011; Karatepe, 2015; Michel, Kavanagh, & Tracey, 2013). Susskind, Kacmar, and Borchgrevink (2003) developed an instrument with four dimensions and 16 items used in later works (Susskind, Kacmar, & Borchgrevink, 2018a, 2018b). Solnet, Ford, and McLennan (2018) used a measure adapted from Schneider, White, and Paul (1998) and He et al. (2011), made up of three dimensions with 14 items. There were four identified articles (Kang, Busser, & Choi, 2018; Kang & Busser, 2018;

Mokhtaran et al., 2015; Sadeghi, Zandieh, Mohammadi, Yaghoubijarboneh & Vosta, 2017) that mentioned the instrument by He et al. (2011). The instrument by Hallowell, Schlesinger, and Zornitsky (1996), with only one dimension, was used by Wong, Ma, Chan, Huang, and Zhao (2019) and Prentice, Ma, and Wong (2019). Kelley's instrument (1992) with also one dimension, was used by Cheng, Hong, and Yang (2018) and Chen and Kao (2014).

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 (Kang & Busser, 2018), influencing employee empowerment and organizational citizenship behaviour to improve customer service quality (Pham Thi Phuong & Ahn, 2021), customers' perceived service value, and behavioural intention (Mokhtaran, Fakharyan, Jalilvand, & Mohebi, 2015). On the other hand, it has a positive relationship with the psychological capital and the quality of work-life (Kang, Busser, & Choi, 2018) as well as it reduces the negative effect of customer involvement (Ma, Gu, Wang, & Hampson, 2017). According to M. Sadeghi et al. (2017), service climate plays a significant role in the hotel service experience and makes an outstanding contribution to predicting satisfaction, trust, and revisiting intention (behavioural 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 (Susskind et al., 2003, 2018a, 2018b) and the Service Profit Chain (Solnet et al., 2018). Chang (2016) studied service climate as a mediator and a moderator. 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 (Kloutsiniotis & Mihail, 2020; Tang & Tang, 2012) and links supervisor servant leadership with service-oriented OCB (D. Elche et al., 2020; Linuesa-Langreo et al., 2017). As a moderator, the findings showed that work engagement is the mediator between psychological capital and service behaviour, and the mediating effect of work engagement changes with service climate (T.-M. Cheng, Hong, & Yang, 2018). Service climate moderates the influence of role stress on burnout (Wen et al., 2020) and the effect on service-oriented behaviours (Q. Ling et al., 2016). At least, culture is an antecedent of service climate. The results showed that culture interacts with other elements, controls them, and positively impacts service climate (Kao et al., 2020; T. R. Morgan, Rapp, Richey, & Ellinger, 2014).

Figure 4.49 - Trend Topics



Legend: own elaboration | Software: R Studio biblioshiny

4.4. Conclusions and implications

The theoretical contribution of this review is to identify the existing research on service climate and provide initial criteria for developing a service climate framework as a sustainable competitive advantage in hospitality. It is beneficial to researchers, scientific journal editors, directors, and HR managers to understand the current research progression, recognize influential articles, and identify the most influential journals in this field as well as potential international collaborators. It reviews and compiles the growing number of publications, identifies development trends and future directions, and collects data about service climate antecedents, consequences, mediators, and moderators in hospitality. The results contribute to the literature and are a basis for future research.

This bibliometric analysis is a valuable method for evaluating scientific production and analyses the conceptual, intellectual, and social structure of knowledge. Through Bibliometrix and network (VOSviewer) analysis, a total of 63 articles published between 2005 and 2021 were reviewed and analysed, covering 167 authors, 30 journals, and 17 countries and indexed with 241 author keywords. The *International Journal of*

Contemporary Hospitality Management is the journal that has grown the most over the years. The article that has received the highest number of citations is "Linking Organizational Resources and Work Engagement to Employee Performance and Customer Loyalty: The Mediation of Service Climate" (Salanova et al., 2005), with a total of 975 citations and an average of 57.35 citations per year. The USA and China are the countries with the highest number of collaborative articles. With a total growth rate of 5.95%, keywords such as service climate, performance, antecedents, and perceptions are closely related (Figure 4.49). The articles represent 3519 customers and 23068 employees.

The new Industrial Revolution 4.0 and the digital market are vital for competitiveness in the hospitality industry. For scholars of these recent sub-field domains, hybrid models (people–technology) are decisive and relevant to help businesses in the hospitality sector 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 align 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, service climate is a reality in hospitality and must be developed, and supported to provide a sustainable competitive advantage.

4.5.Limitations

This study should be read at 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 analysed.

Also, articles in English, 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 distributions of publications was made without taking into account the population of each country. If this had been done, the results would, most probably, be different.

Finally, the data was analysed without any manual editing. Had this been done, some differences might arise since some authors may have more than one name, use different initials, or sign under different names in various publications.

4.6.Future research

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

Literature predominantly measures employee perceptions of 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 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 or an in-depth understanding and thus to find new competitive advantages.

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Author contributions

All authors, Hugo Palácios, Maria Helena de Almeida e Maria José Sousa contributed to the manuscript, read and approved the submitted manuscript. This agreement is a statement to certify that all authors have seen and approved the manuscript's final version being submitted. This manuscript has not received prior publication and is not under consideration for publication elsewhere.

Conflicts of interest

The authors declare no conflict of interest.

4.7. References

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CHAPTER 5 – STUDY 4

DEVELOPING A PEOPLE-TECHNOLOGY HYBRID SCALE TO MEASURE SERVICE CLIMATE IN HOSPITALITY⁵

Abstract

In hospitality, service climate is a sustainable competitive advantage. The perceptions of people (employees and customers) in hybrid service deliveries (Human Interaction Service and Self-Service Technologies) can be a relevant tool. This article focuses on the hybrid service climate in hospitality, presenting a new instrument to measure the People-Technology Hybrid Service Climate Scale (P-THSCS). Service climate scales are oriented predominantly to measure employee perceptions toward hotels with human interaction service delivery. P-THSCS has an original, innovative, and compact perspective. It measures the perceptions of people (employees and customers) in hybrid service deliveries (Human Interaction Service and Self-Service Technologies). An eDelphi method was used, supported by an international panel of 21 experts. The scale developed was constructed by consensus among experts. As a result, we have developed and validated (version in English) a measuring instrument composed of 31 items that can be used as a valid instrument for use by hotel managers and academia.

KEYWORDS: *Service Climate; Hybrid; Hospitality; Scale development; Modified eDelphi; Factor analysis*

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6.1 Introduction

Over the past few years, the World Economic Forum has been warning (The Global Risks Report 2021) of the deterioration of employment as one of the main risks for the future of societies (Forum, 2020). One of the sustainable development goals, SDG8 – decent work and economic growth – aims to achieve sustainability and competitiveness. Being sustainable through increasing the quality of human resources, their education and requalification, the introduction of technology and digital, and being competitive through better management of differentiating characteristics, is one of the biggest challenges of the future in the hospitality industry.

The potential sustainability and competitive advantage of service climate is undeniable, from a management perspective, due to its distinctiveness and exclusivity (Ployhart, Van Iddekinge & MacKenzie Jr, 2011). It is the unique and intangible asset of the perceptual inferences of organizational members, difficult to build and impossible to replicate (Bowen & Schneider, 2014), related to customer experiences and thus to financial performance. To Schneider, White & Paul (1998) service climate is the "employees' perceptions of practices, procedures, and behaviors that are rewarded, supported, and expected in relation to customer service and the quality of customer service" (p. 151). The literature is extensive on the perspective of employee perception of service climate. It relates to customer experiences, namely service quality (Schneider *et al.*, 1998), customer satisfaction (He, Li & Lai, 2011), trust (Sadeghi, Zandieh, Mohammadi, Yaghoubibijarboneh & Nasrolahi Vosta, 2017) and loyalty (Salanova, Agut & Peiro, 2005), return intentions and firm performance (Susskind, Kacmar & Borchgrevink, 2018a) and leading to higher profits (Solnet, Ford & McLennan, 2018).

Although in the literature, the service climate is a construct initially related to the employee level, the service climate under the customer's perception (customer perceived service climate) has been gaining dimension in the literature. Being of service means more than providing the service; it means meeting someone's needs. For this purpose, Jung, Yoo & Arnold (2017) introduced in their work the concept of customer-perceived service climate as "customer perception of the degree to which the service organization trains, prioritizes and understands superior customer service through its implementation and service procedures" (p. 428). The service is always provided to customers directly through personal service and indirectly through high-tech service devices (automated

filling devices, ATMs, and others). This customer perception (Borucki & Burke, 1999) is fundamental because technology and digital (Self-Service Technologies - SSTs) have been changing how customers interact with hotels to create new service deliveries (Bacile, 2020; Bae, 2021).

To Kandampully, Bilgihan & Zhang (2016), in hotels holding hybrid service delivery models (Human Interaction Service Delivery and Self-Service Technology), people (employees and customers) co-create the service experience; in this way, it can vary from individual to individual and depends on how each one chooses to co-create his own unique experiences. Hotels need to create an experience environment within which people can create their own unique personalized experiences (Prahalad & Ramaswamy, 2004). The customer acts both as a co-creator of value as a provider of services. In the hybrid context, a relevant relationship between people's perceptions (employee and customers perceptions) of the service climate and the service experienced by customers in hotel service delivery options (Park, Kwun, Park & Bufquin, 2022) and firm performance (Susskind *et al.*, 2018a; Susskind, Kacmar & Borchgrevink, 2003, 2018b) are evidence.

The development of this study is justified by the need to measure the service climate in hotels offering hybrid service delivery (human interaction and self-service technologies) perceived by people (employees and customers), trying to fill this gap in the literature regarding the lack of tool measurement in this field. In theory, the agenda for future service climate theory and research of Bowen & Schneider (2014) indicates the need to develop and combine generic and customized approaches for specific service climate measures and the importance of studying the differences in customer expectations, needs, and cocreation capabilities. The authors discuss the utility of the service climate framework in some service management topics, as the customer's role in co-creating service climates as the social context for the cocreation of value, and propose to begin to understand the interplay of the cocreation of value with service climate creation and the role the customer plays in each part. Service-dominant logic (SDL) recasts the customer's role in service, extending it from merely helping co-produce the service to genuinely co-creating value (Vargo & Lusch, 2004; Vargo & Lusch, 2008; Lusch & Vargo, 2014). On the other hand, Kandampully *et al.* (2016) developed a hybrid model based on people and technology so as to promote novelty and creativity in hospitality. They promote some research directions to understand how the joint resources

of people (employees and customers) and technology may act as critical sources for hospitality management. Thus, the service climate is built based on caring for internal (employees) and external customers (Voon, Hamali & Tangkau, 2009). In this way, it is essential to develop and validate a scale to measure this variable and help researchers and professionals to manage this intangible asset as a sustainable competitive advantage in the hotel industry.

Our main objective is to establish a scale to measure the service climate in hotels with hybrid service delivery, namely through human interaction and self-service technologies. This scale can be directly applicable, and incorporates the perception of the employee or the customers, not independently, by themselves, but as people (employees and customers), within the organization as a whole, therefore incorporating the physical service environment as well. Different methods, combining three extensive systematic literature reviews, two exploratory qualitative studies, and a confirmatory quantitative study, are adopted to develop this scale.

The second section of this article explains the research's theoretical foundations and conceptual development. In the third section, the research methodology is presented in 3 phases composed by the concept, the dimension specification, and the item generation (first phase); details of the eDelphi procedure and a description of the interactive process used to reach expert panel consensus (second phase); the methodology for scale purification and validation (third phase)—finally, the results, conclusions, implications, limitations, and suggestions for future research.

5.2 Literature review

5.2.1 Service Delivery

In hospitality, the service encounter is essential for the valorization of the service delivery (Johanson & Woods, 2008). The service encounter is between contact-employees and customers (Safaeimanesh, Kılıç, Alipour & Safaeimanesh, 2021). During the contact the client interacts directly with the service. This includes the contact-employee, the physical facilities, the available technologies as well as all other tangible elements of the hotel. The correct management of the service delivery or co-creating it with customers can influence the success of the customer experience in these moments of trust (Safaeimanesh *et al.*, 2021). Recently, we have seen an essential shift in service delivery in hotels. There is a tendency to shift from traditional human interaction service

(HIS) to self-service technology (SST). On the one hand, many hotels adopt SSTs, as they are inevitably the mainstream of hotel service delivery in the future (Kattara & El-Said, 2013). However, from another perspective, there is still much skepticism about abandoning human interaction service since it influences the customers' perceptions of service experience. For example, Park *et al.* (2022) highlight the differences in customers' service quality evaluations between human interaction service (HIS) and self-service technology (SST). While, Liu, Hung, Wang & Wang (2020) conclude that hotels should progressively start replacing traditional face-to-face services by SSTs. However, the same authors (Liu *et al.*, 2020) add that hotels have taken wait-and-see attitudes toward innovative SSTs, and customers tend to remain unfamiliar with such devices (Liu *et al.*, 2020). Effectively, hotel management is not entirely confident with adopting SSTs, how to implement them and whether customers will accept them if implemented (Wei, Torres & Hua, 2016). Thus, hotel managers have chosen to take advantage of all synergies between the two types of service delivery (Oh, Jeong & Baloglu, 2013). They opt to implement hybrid service delivery models with high-tech self-service and high-touch personal service (Klier, Klier, Müller & Rauch, 2016; Law, Leung & Chan, 2019). In this service delivery, both (customers and employees) are people, and co-create the service experience.

5.2.1.1 Human Interaction Service

Human interaction service is a direct interaction between contact-employees and customers (Park *et al.*, 2022). In hospitality, people enjoy an exclusive and personalized service with niceties that make them feel special. This kind of interaction is, in essence, an essential part of service delivery, and its realization can affect people on a physical, emotional, and cognitive level (Zapf & Holz, 2006). The contact-employee must deal with the service role and the complexity of customer relationships and needs (Carvalho, 2008). In human interaction service delivery, this personalization, these moments, and these details make the difference in people's experience and perception of satisfaction, quality, and loyalty (Park *et al.*, 2022; Ko, 2017; Guenzi & Pelloni, 2004). At the service encounter, the moment of trust, face-to-face, servers have to enjoy and have pleasure, with the feeling of making these people's lives even more pleasant, and they have to be able to adapt the service delivery in order to surprise the customer and exceed their expectations positively, and that induces, happiness, gratitude (Palácios, Almeida &

Sousa, 2021). These traditional face-to-face encounters will continue to play a vital role in the hospitality service experience (Lee & Yang, 2013). Self-Service Technologies (SST's) have also transformed how hotel services are delivered.

5.2.1.2 Self-Service Technologies (SST's)

Conceived as the latest and critical servers in hospitality delivery systems, initially offered by Dabholkar (1996), are Self-service technologies (SSTs). (Safaeimanesh *et al.*, 2021; Neuhofer, Buhalis & Ladkin, 2013; Djelassi, Diallo & Zielke, 2018). These technological interfaces, which do not require direct interaction with contact-employees (Meuter, Ostrom, Roundtree & Bitner, 2000), imply that customers are co-producers, contributing to the service delivery process, and providing services via technology (Park *et al.*, 2022; Shin & Perdue, 2019). In service deliveries with SSTs, such as self-check-in/check-out in hotels, facial recognition check-in, online bookings, and reservations, customers are involved and co-create the delivery (Law, Leung & Buhalis, 2009). Meuter *et al.* (2000) define SSTs as technologies that can increase customers' capacity to deliver a service self-sufficiently. In hospitality literature, Wei *et al.* (2016) explored the influence of adopting SSTs and the impact on customers' experience, namely, customer satisfaction (Li, 2020; Kim & Park, 2019). This service delivery reduces costs, increases productivity and profitability, and provides speed, flextime, convenience, and innovation (Dabholkar, 1996; Taillon & Huhmann, 2019; Kokkinou & Cranage, 2015; Dabholkar, 1994), in order to create a positive service climate that not only results in greater employee and customer engagement, but also drives organizational results at all levels.

5.2.2 Service Climate

5.2.2.1 Employee Perception of Service Climate

Traditionally, the service climate is an employee-level construct (Bae, 2021). Bowen & Schneider (2014) defined the service climate as “employees' shared sense of service quality—focused policies, practices and procedures they experience and the service quality emphasis they observe in behaviors that are rewarded, supported, and expected” (p. 5). In other words, employee perception of service climate (EPSC) refers to employees' shared perceptions of the processes, practices, and policies regarding work behaviors to pursue service excellence that is encouraged, compensated, supported, and

rewarded by the hotels (Schneider *et al.*, 1998; Schneider, 1973, 1980). To Sadeghi, Zandieh, Mohammadi, Yaghoubibijarboneh & Vosta (2017), service climate has a key role in the hotel service experience. EPSC is related to a hotel's bottom line, with direct and indirect links to customer experiences (Verhoef *et al.*, 2009), such as service quality (Schneider *et al.*, 1998), customer satisfaction (He *et al.*, 2011), customer trust (Sadeghi, Zandieh, Mohammadi, Yaghoubibijarboneh & Vosta, 2017), customer loyalty (Salanova *et al.*, 2005), influencing organizations performance (Susskind *et al.*, 2018a) with higher profits (Solnet *et al.*, 2018). There is no consensus in literature on the dimensions of service climate, but employee engagement is definitely one of its foundation (Bowen & Schneider, 2014). Much as employees may develop perceptions of service climate, Jung *et al.* (2017) defend that customers also perceive a structured service climate of a hotel with which they interact and supports their employees to serve customers better (Schneider, 1973). In addition, the understanding that customer service is a critical factor for management can strongly contribute to strengthening the customer service climate.

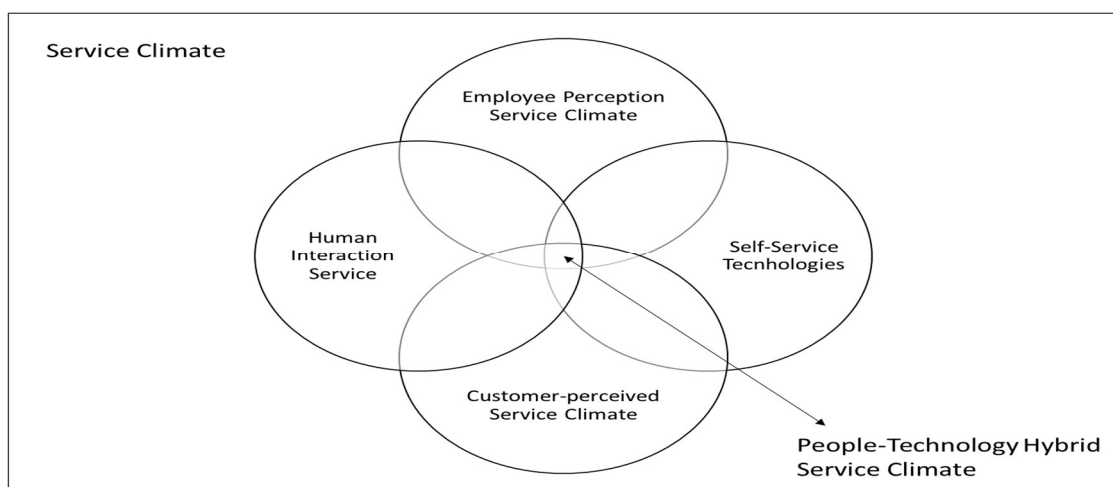
5.2.2.2 Customer-perceived Service Climate

Bowen & Schneider (2014) report that studying service climate from customers' perspectives is necessary. Jung *et al.* (2017) introduce customer-perceived service climate (CPSC) in the service climate theory, which defines it as "a customer's perception of the extent to which a service organization teaches, prioritizes, and recognizes outstanding customer service through organizational practices and procedures" (p. 428). Borucki & Burke (1999) presented one of the first approaches to the CPSC and provided support for viewing work climate perceptions as comprised of two higher-order factors: 'Concern for Employees' and 'Concern for Customers'. Bae (2021) follows Jung *et al.* (2017) in this field and uses service climate as a customer-level construct to study whether CPSC can affect customers' perception of service experiences. The authors found CPSC has a positive effect on service value and service satisfaction. To Bacile (2020), this customer-side assessment of service climate is fundamental to customer-to-customer interactions. Within this field, Li & Huang (2019) related CPSC with self-service technologies (SSTs), and the results show a positive influence on customers' continuance intentions toward in-lobby SSTs. Qiu, Wang & Li (2021a) expanded and operationalized this perspective in the hospitality context, and the results indicate a positive impact on customer citizenship behavior, stimulating technological and digital advances.

5.2.3 People-technology hybrid service climate

Technological and digital advances have changed the way employees and customers interact, the way service is delivered, as well as some critical factors for the hotel industry's success. Kandampully *et al.* (2016) studied hotel management changes to understand how the combined resources of people (the binomial employees-customers) and technology (the binomial people-technology) are essential factors of innovation, sustainability, and competitiveness. For hospitality organizations, this combination of people and technology represents a hybrid that gives the company a unique ability to leverage both internal and external resources. People-technology hybrid service climate the perception people have on the practices, procedures, behaviors, and trust in hybrid service deliveries that are expected, trained, rewarded, and supported by a service organization to help people experience the service quality. The technology, digital and self-service technologies revolutionized the hospitality market and ended the exclusivity of human interaction service delivery, encouraging service co-creation, and obtaining new ideas and feedback (Hammedi, Kandampully, Zhang & Bouquiaux, 2015). Thus, our scale aims to measure people's perceptions, including employees (Employee perception service climate) and customers (Customer-perceived service climate) as a global and essential resource (Gruman & Saks, 2011), considering employees as an internal human factor and customers as an external human factor (Kandampully *et al.*, 2016), in hybrid (human interaction service and self-service technologies) service delivery (Figure 5.50).

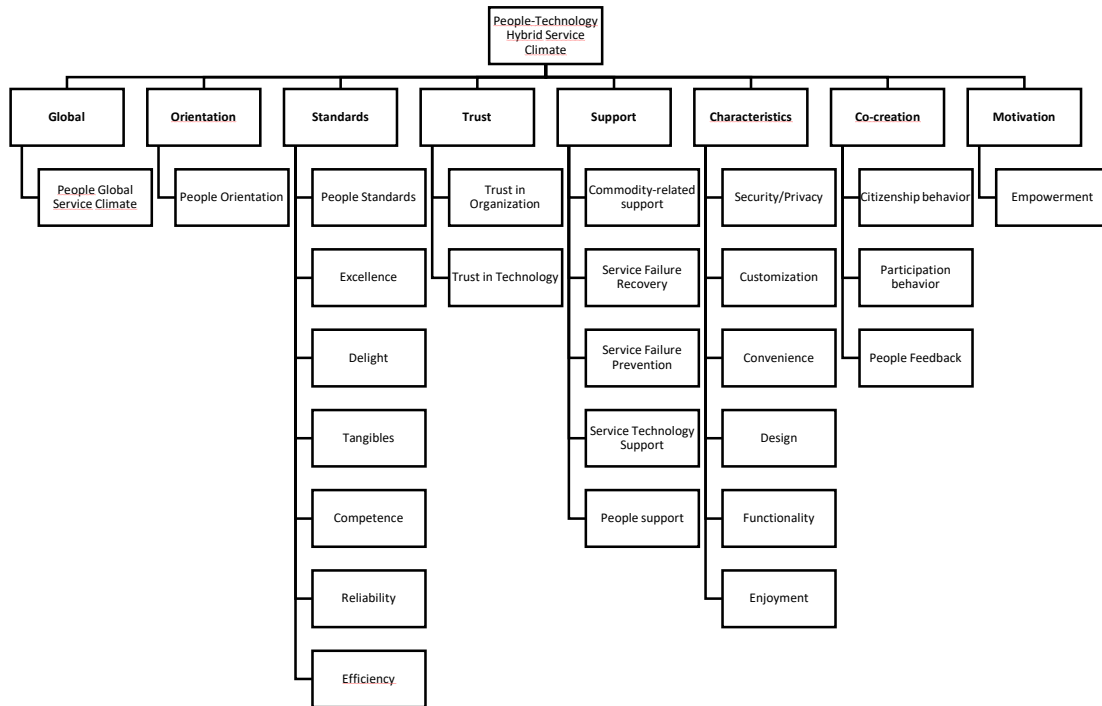
Figure 5.50 - People-Technology Hybrid Service Climate



Specifically, the current study explored the eight theoretical dimensions of people-technology hybrid service climate (the preliminary research framework) that follow:

global, orientation, standards, support, trust, characteristics, co-creation, and empowerment (see figure 5.51). The following presents a clarification of these eight dimensions and their sub-dimensions.

Figure 5.51 - Dimensions and Sub-dimensions framework



Global. The people's global service climate dimension provides a summary measure of the hotel's climate for service and unifies the employee perception of global service climate and the global customer-perceived service climate. This dimension addresses many aspects of the other dimensions; however, it is not a compilation. It should be analyzed as a measure in its own right that aims to identify the core issue of the service climate in the people's perception (employees and customers).

Orientation. The people orientation dimension assesses how a hotel prioritizes people's interests and how well the service delivery meets their needs and service quality expectations. It focuses on suggestions or complaints and incorporates this information to develop guidelines, policies, and regulations for customer service and human resources management. It manifests through a feeling of valuable contribution, belonging, and commitment to a hotel where everyone aims for common satisfaction.

Standards. This dimension focuses on the key factors they are expected to follow as service standards for delivering high-quality and excellent services (Hoang, Hill, Lu &

Freeman, 2018; Susskind, Kacmar & Borchgrevink, 2007) in hospitality. Park *et al.* (2022) conceptualized **reliability, competence, efficiency, and tangibility** as essential service quality dimensions applicable to HIS and SST delivery options and positively influencing customers' service perceptions. Johnston (2007) defines service excellence as the "delivery of a level of service quality that results in delight" (p. 20). **Service excellence** comprises four key elements: delivering the promise, providing a personal touch, going the extra mile, and correctly dealing with problems and queries (Johnston, 2007). To Oliver (2014), **delight** is defined as "an expression of very high satisfaction", "an extreme expression of positive affect resulting from surprisingly good performance" (p. 22). **People standards** exist to guide, direct and monitor the service delivery people's behaviors (Susskind *et al.*, 2003). This sub-dimension represents the extent to which these people believe they are viewed as an essential part of the service delivery process (Susskind *et al.*, 2003; Lewis, 1989).

Trust. The trust dimension represents the attribution of trust by people (interaction between people, between people and hotels, and between people and technologies). When a customer trusts a hotel, he/she has confidence in the quality and reliability of the services offered (Garbarino & Johnson, 1999). This trust is thus a status attributed to people, not the hotel's acquired status. Hotels only control what makes them more trustworthy. People need to perceive the ability of the hotel and its technologies to deliver what they promise and that there is a structural motivation to meet their expectations and needs. This way, contact-employees, and technologies are the main links between service delivery and trust. The existence of trust reduces anxiety and vulnerability and preserves the relationships between people and the hotel, which is essential for the service climate. Chen, Liu, Li & Yen (2013) uses satisfaction and trust as constructs for measuring relationship quality, and Lin & Ding (2009) also suggested that customer satisfaction, trust, and relationship quality as related to an IT service affect loyalty. Our study adopts **trust in technology** as the level of user confidence in the quality and reliability of the hotel technology system (Tam & Wong, 2001; Caceres & Paparoidamis, 2007). According to Rauyruen & Miller (2007) there are two levels of trust. At the first level, the customer trusts one particular employee, while at the second level, the customer **trusts the organization** (Liu, Guo & Lee, 2011; Hsieh & Hiang, 2004). In hotels with hybrid service delivery, many services can be obtained via SST's and there is often no need to interact with human service delivery. To our study, people trust in the hotel as a whole.

Support. People must be supported to deliver service excellence standards. This dimension reflects those actions taken by people to support and reward quality service delivery (Schneider *et al.*, 1998). In hospitality with hybrid service delivery, **service technology support, people support, and Commodity-related support** are fundamental. Borucki & Burke (1999) identify customer-perceived service and human resource support as dimensions of customer-perceived service climate. Qiu *et al.* (2021a) define commodity-related support as customers' perceived support of commodities concerning types, quality, commodity updates, and people support as empowering people to meet their needs and well-being better. From another perspective, supporting technology service quality and **service failure prevention and recovery** is fundamental. Failure occurs in hospitality. So, the hotel cannot fail to prevent and resolve that failures or problems (Lytle, Hom & Mokwa, 1998).

Characteristics. This dimension focuses on service delivery characteristics and reflects people's perception of the influence of these characteristics as fundamental to people's perception of service quality and excellence at the hotel. From the point of view of hospitality literature, Safaeimanesh *et al.* (2021) examine some characteristics as antecedents of service excellence. **Functionality** is seen as performance focused on the reliability and accuracy of the tasks performed (Dabholkar, 1996, 1994). **Enjoyment** is related to the likelihood of customers will re-use if they find it enjoyable (Dabholkar, 1996, 1994). **Security and privacy**, especially during service delivery, are essential when customers interact with technology (Theodosiou, Katsikea, Samiee & Makri, 2019), as they impact service quality and satisfaction. **Design** is a tangible element of service quality (Parasuraman, Zeithaml & Berry, 1988) which reflects people's demand for up-to-date technologies (Zeithaml, Parasuraman & Malhotra, 2002) and should therefore be aesthetically appealing (Thüring & Mahlke, 2007). **Customization** molding the characteristics of the service to meet each customer's specific desires or requests and likings (Lovelock & Patterson, 2015) as a conveyor of advantages for both organizations and customers. Customized services can indicate a high quality of the service (Ostrom & Lacobucci, 1995). The **convenience** of the service delivery is related to people's desired services, which take place "where they want" and "when they want" (Safaeimanesh *et al.*, 2021) and is recognized as one of the inducers of service quality (Ding, Hu & Sheng, 2011).

Co-creation. The co-creation dimension relates to how value is co-created by the hotel, customers, employees, and technology within a unique system, thus contributing to a differentiated service climate. It focuses on the hotel obtaining essential insights to incorporate and innovate the service (Kandampully *et al.*, 2016). People want to interact with hotels and co-create value. This way, co-creation in providing a particular service is related to participation, citizenship behavior (Alves, Ferreira & Fernandes, 2016; Yi & Gong, 2013), and feedback (Schneider *et al.*, 1998; Salanova *et al.*, 2005). This dimension measures people's participation in service delivery, their role as a stimulus to support the hotel, and their feedback. Yi & Gong (2013) developed the customer value co-creation behavior scale with two dimensions: **participation behavior** and **citizenship behavior**. **Participation behavior** refers to in-role behavior necessary for successful value co-creation; citizenship behavior is extra-role behavior but is not necessarily required for value co-creation. **People Feedback** refers to the request and use of feedback by people concerning the quality of the service (Schneider *et al.*, 1998; Carrasco, Martínez-Tur, Peiró & Moliner, 2012)

Motivation. The dimension of motivation focuses on the psychological empowerment of people to have control over their choices and be autonomous in service delivery, self-service technologies, and service co-creation, increasing positive experiences, satisfaction, and loyalty., as part of the service climate. According to Spreitzer (1995), Psychological Empowerment is a motivational construct that guarantees conditions that increase motivation to perform tasks and contributes to improving service quality (Conger & Kanungo, 1988). Although in the literature, Psychological Empowerment is initially related to the employee perspective (Spreitzer, 1995; Vieira dos Santos, Gonçalves, Orgambidez Ramos, Borrego Alés & Mendoza Sierra, 2014), customer psychological empowerment has been gaining dimension in the literature. Buehler & Maas (2018) define customer psychological empowerment as customers' feeling the power they have in the service processes. In our study, the sub-dimension **empowerment** relates to people's psychological reactions (Qiu *et al.*, 2021a). In terms of service climate, we can expect that positive psychological empowerment of the people will trigger service quality and satisfaction (Moura & Ramos, 2014).

5.3 Methodology

5.3.1 Research Design

Followed the model of development of a scale by Lewis, Templeton & Byrd (2005), replicated in 3 phases by Kuo, Cheng, Chang & Ying (2020) to develop, validate and finalize the instrument this study presents (Table 5.XIV) 3 research works (Netemeyer, Bearden & Sharma, 2003; DeVellis & Thorpe, 2021; Johnson & Morgan, 2016).

Table 5.XIV - Research Design

Study Design	Research 1	Exploratory	Three rounds of pilot tests; Final draft of the instrument	Qualitative: Delphi technique (eDelphi)	Content analysis; content validity and expert validity with consensus
	Research 2	Exploratory / Confirmative	Item screening & factor structure	Quantitative: Survey	Principal component analysis and exploratory factor analysis
	Research 3	Confirmative	Validation factor structure	Quantitative: Survey	Confirmatory factor analysis and Instrument reliability and validity

Legend: own elaboration | software: excel

In research 1, we identified concepts, definitions, dimensions, sub-dimensions and items through systematic literature reviews to develop a initial research framework for the People-Technology Hybrid Service Climate Scale. To develop the scale, we adopt the modified Delphi method proposed by (Murry Jr & Hammons, 1995) and establish the initial draft of the instrument (initial pool), its underlying dimensions, sub-dimensions, and items based on systematic literature reviews. The initial open-ended instrument, typical of the Delphi method, was replaced by three systematic literature reviews. The initial pool was sent for review, analysis, and discussion by a first working group. Following their feedback, we modified and confirmed the preliminary research framework of the people-technology hybrid service climate. In this qualitative research, 21 experts on hospitality shared their expertise and opinions to discuss a preliminary research framework for the People-Technology Hybrid Service Climate Scale.

We operationalize two quantitative studies (research 2 and 3) to evaluate, purify, and validate the People-Technology Hybrid Service Climate Scale. Both with survey

methodology, research 2 presents Principal Component Analysis (PCA) to reduce items to a more practical and useful size (sample 1, n=130) and Exploratory Factor Analysis (EFA) to explore the factor structure of the data (sample 2, n=282). Research 3 involved validating the factor structure using the Confirmatory Factor Analysis (CFA) and testing the instrument's reliability and validity (sample 3, n=270). We collected three data samples (see Table 5.XV) to operationalize research 2 and 3.

Table 5.XV - Samples profiles

		Sample 1		Sample 2		Sample 3	
		n	%	n	%	n	%
Total		130	100,0%	282	100%	270	100,0%
Gender	Female	62	47,7%	166	58,9%	146	54,1%
	Male	68	52,3%	116	41,1%	124	45,9%
Age	18-24	18	13,9%	8	2,8%	24	8,9%
	25-44	61	46,9%	30	10,6%	79	29,3%
	45-54	36	27,7%	84	29,8%	76	28,1%
	55-64	11	8,5%	156	55,3%	86	31,9%
	65 above	4	3,1%	4	1,4%	5	1,9%
Type	Hotel Employee	58	44,6%	74	26,2%	100	37,0%
	Hotel Customer	72	55,4%	208	73,8%	170	63,0%

Legend: own elaboration | software: surveymonkey

Below we present in detail each of the three phases developed to carry out the 3 research works.

5.3.2 Phase 1 – Concept, dimension, and item generation

This first phase aimed at developing a preliminary research framework for the People-Technology Hybrid Service Climate Scale and its underlying dimensions. In order to save time, increase control over the process and avoid significant conceptual and opinion differences among experts (Kuo *et al.*, 2020), in this study we replaced the initial open-ended questionnaire of the traditional Delphi method (DeVellis & Thorpe, 2021; Johnson & Morgan, 2016) by the modified Delphi method (Murry Jr & Hammons, 1995) and established the initial dimensions, sub-dimensions, and items for the pilot questionnaire, based on systematic literature reviews (Palácios, Almeida, *et al.*, 2021; Palácios, de Almeida & Sousa, 2021). This study used a compilation of items from

different instruments, of several studies, depending on the domains and sub-domains identified in the literature reviews.

A list of dimensions indicating the constructive elements of the study was assembled. The sub-dimensions of the research framework were based on the studies presented in Table 5.XVI.

We invited the first group of experts to evaluate the domains, sub-domains, and items from the initial pool and to determine if they were adequate, needed some revision or should be excluded. The right size of this first group is between 4 and 12 specialists (Kuo *et al.*, 2020; Krueger & Casey, 2002). For this step, we invited 6 experts, 2 of which were refused and 4 were accepted. This working group reviewed, analyzed, and discussed the pilot questionnaire. Based on the comments and suggestions received, we made some reformulations and changes to the linguistics, grammar, and English language, but in general, the initial 136 items of the pilot questionnaire established by the researchers, based on the literature reviews, were maintained. Thus, the pilot questionnaire that served as the basis for phase 2 is composed of 8 dimensions, 26 sub-dimensions, and 136 items.

5.3.3 Phase 2 - Construction of instrument

In phase 2, the questionnaires were carried out using the e-Delphi technique, and we followed the recommendation of three rounds (Netemeyer *et al.*, 2003; Duffield, 1988; Hsu & Sandford, 2007; Delbecq, Van de Ven & Gustafson, 1975) so that the experts reached a degree of consensus. The rounds were carried out on [Dec21/Jan22], [Feb22/Mar22], and [Mar22/Apr22], available in a virtual environment [online] through the software eDelphi.org.

Initially, 132 formal and personalized invitations were sent for collaboration on the panel. This invitation included a direct link (google forms) to register the acceptance and consent for sending the collaboration protocol, instructions, and informed consent document. The word-of-mouth hypothesis was also included to recommend other specialists to participate in our study.

Table 5.XVI - Dimensions, sub-dimensions based on literature review

Dimensions	Sub-dimensions	Items Studies
Global	People Service Climate	(Schneider <i>et al.</i> , 1998), (Jung <i>et al.</i> , 2017), (Bae, 2021)
Orientation	People Orientation	(Borucki & Burke, 1999), (Qiu, Wang & Li, 2021b), (He <i>et al.</i> , 2011), (Kang, Busser & Choi, 2018; Kang & Busser, 2018)
Standards	Reliability	(Olorunniwo, Hsu & Udo, 2006), (Park <i>et al.</i> , 2022)
	Competence	(Kelley, 1992), (Shahid Iqbal, Ul Hassan & Habibah, 2018), (Olorunniwo <i>et al.</i> , 2006), (Park <i>et al.</i> , 2022)
	Efficiency	(Parasuraman, Zeithaml & Malhotra, 2005), (Olorunniwo <i>et al.</i> , 2006); (Park <i>et al.</i> , 2022)
	Tangibles	(Parasuraman <i>et al.</i> , 2005), (Olorunniwo <i>et al.</i> , 2006); (Park <i>et al.</i> , 2022)
	Delight	(Dabholkar & Bagozzi, 2002), (Park <i>et al.</i> , 2022)
	Excellence	(Safaeimanesh <i>et al.</i> , 2021)
	People Standards	(Susskind <i>et al.</i> , 2018a, 2003, 2018b), (Borucki & Burke, 1999), (Qiu <i>et al.</i> , 2021b), (He <i>et al.</i> , 2011)
Support	Commodity-related support	(Borucki & Burke, 1999), (Qiu <i>et al.</i> , 2021b), (He <i>et al.</i> , 2011)
	People support	(Susskind <i>et al.</i> , 2018a, 2003, 2018b), (Borucki & Burke, 1999), (Qiu <i>et al.</i> , 2021b), (He <i>et al.</i> , 2011)
	Service Technology Support	(Lytle <i>et al.</i> , 1998), (García, Varela & Del Río, 2011)
	Service Failure Prevention	(Lytle <i>et al.</i> , 1998)
	Service Failure Recovery	(Lytle <i>et al.</i> , 1998)
Trust	Trust in Technology	(Chen <i>et al.</i> , 2013), (Johnson, Bardhi & Dunn, 2008)
	Trust in Organization	(Omarov, 2009),(Güçer & Şerif, 2014) (Sadeghi, Zandieh, Mohammadi, Yaghoubibijarboneh & Nasrolahi Vosta, 2017), (Liu <i>et al.</i> , 2011)
Characatheristics	Enjoyment	(Safaeimanesh <i>et al.</i> , 2021)
	Functionality	(Safaeimanesh <i>et al.</i> , 2021)
	Security/Privacy	(Safaeimanesh <i>et al.</i> , 2021), (Lin & Hsieh, 2011)
	Design	(He <i>et al.</i> , 2011), (Kang <i>et al.</i> , 2018; Kang & Busser, 2018), (Kloutsiniotis & Mihail, 2020)
	Convenience	(Shahid Iqbal <i>et al.</i> , 2018), (Safaeimanesh <i>et al.</i> , 2021)
	Customization	(He <i>et al.</i> , 2011), (Kang <i>et al.</i> , 2018; Kang & Busser, 2018), (Kloutsiniotis & Mihail, 2020), (Shahid Iqbal <i>et al.</i> , 2018), (Safaeimanesh <i>et al.</i> , 2021)
	Co-creation	People Feedback
Participation behaviour		(Yi & Gong, 2013), (Alves <i>et al.</i> , 2016)
Citizenship behavior		(Tsaour, Wang, Yen & Liu, 2014), (Yi & Gong, 2013), (Alves <i>et al.</i> , 2016)
Motivation	Empowerment	(Qiu <i>et al.</i> , 2021b), (Spreitzer, 1995), (Prentice, Han & Li, 2016)

Legend: own elaboration | software: excel

The criteria for inclusion in the panel of experts were divided into two groups: In the group of scientific knowledge were included: (a) authors of the scales and articles that served as the basis for the pilot questionnaire; (b) authors and researchers included in the SLRs that will serve as the basis for this study; (c) academics with articles published in several of the dimensions that make up the service climate; (d) authors of articles that have applied the service climate to other contexts; and the know-how group included: professionals, academics, and recommendations with experience in the field of hospitality and tourism, according to the position, function, and department.

Of all the invitations, 22 were formally declined (16.6%), and 89 did not respond (67.4%). Therefore, the rounds stage started with a panel of 21 experts. According to the literature (Kuo *et al.*, 2020; DeVellis & Thorpe, 2021; Delbecq *et al.*, 1975), the ideal number of specialists for these rounds is between 10 and 50.

Before round 1, a preliminary communication (briefing) was sent, explaining the purpose of the study, concepts, rules, and the methodology to be used by experts in the collaboration and response process. These questionnaires could be answered according to availability and the panel's convenience, respecting the requested deadlines.

In Round 1 [Dec21/Jan22], 21 experts received the pilot questionnaire consisting of 8 dimensions, 26 sub-dimensions, and 136 items to assess each item's wording and relevance to the associated constructs. The panel was invited to comment and discuss whether the items were irrelevant or inappropriate and to maintain, change or delete those same items. In this round, we excluded 14 items.

In Round 2 [Feb22/Mar22], the experts rate the 122 items on a Likert scale of 1 (extremely unimportant) to 5 (extremely important) and comment on incongruities of the items. Data were extracted into excel, converted, and statistically analyzed using SPSS software. Cronbach's alpha is 0.979 for the 122 items, which confirms the validity. According to Faherty (1979), for a 5-point Likert scale, a high degree of consistency is achieved if the interquartile range (IQR) is less than or equal to 0.60, and a IQR above 1.00 represents a failure to reach consensus. In this round, we excluded: 1) items with incongruities and difficulties in interpretation and measurement and 2) items on which the experts could not reach a consensus. This round removed 28 items, narrowing the total number of items to 94.

A third round was performed [Mar22/Apr22]. We got 21 responses from the expert panel. Data from round 3 were extracted to excel, converted, and statistically analyzed using SPSS software. Cronbach's alpha is 0.972 for the 94 items, which confirms the validity. We exclude all items with an IQR greater than 1.00. Of the items with an IQR between 0.60 and 1.00, we kept the items whose means were equal to or greater than the mean of the means of the items and the items whose standard deviation was equal to or less than the mean of the standard deviations. The application of these criteria resulted in the removal of 25 items.

5.3.4 Phase 3 – Evaluation of measurement, scale purification, and validation

The purification and validation of the People-Technology Hybrid Service Climate Scale (P-THSC) are fundamental because eDelphi initial items are operationalized through systematic literature reviews. In this phase, we used the methodology followed by Kuo *et al.* (2020), which is based on the works of Lewis *et al.* (2005), and two quantitative studies were executed. The first study focused on scale purification and used Principal Component Analysis (PCA) and Exploratory Factor Analysis (EFA). On the second study we used Confirmatory Factor Analysis (CFA). To evaluate the reliability and validity of the questionnaire instrument, cross-validation with exploratory and confirmatory techniques were used, following Horng, Teng & Baum (2009).

5.4 Results

5.4.1 Research 1 – eDelphi: People-Technology Hybrid Service Climate Scale

Three rounds of pilot tests were performed. Through the software, eDelphi.org experts answered some questions with the aim of achieving expert validity, content validity, and seeking for expert consensus for the final version of the instrument. In the end, we came up to final scale containing 8 dimensions, 26 sub-dimensions, and 69 items. Table 5.XVII shows the 69 items of our final eDelphi instrument (see appendix 1 and 2 to detail results of research 1).

Table 5.XVII - Final eDelphi 69-item instrument

Dimensions	Sub-dimensions	Final eDelphi instrument (69 items)
Global	People Service Climate	People at the hotel seem to be trying to provide a good service climate.
		The facility layout of the hotel seems to have considered people's convenience.
		The service climate of the hotel is good.
		People's job knowledge and skills to deliver superior quality service have a positive rate in this hotel.
		There are efforts to measure and track the HIS/SST's delivery quality in this hotel.
		The quality of HIS/SST's delivery provided by this hotel is good.
		The hotel's tools, technology, and other resources to support superior quality service delivery have a good rate.
Orientation	People Orientation	The hotel takes people's feedback seriously.
		The hotel completes people's orders quickly.
		Superior service quality is emphasized as the best way to keep people in this hotel.
Standards	Reliability	The time it took to check in/check out is not too long.
		The hotel HIS/SST's accurately verifies the reservation requests.
	Competence	The hotel HIS/SST's is handled with people's specific needs.
		The hotel HIS/SST's is fast and delivered in a short time.
	Efficiency	The hotel HIS/SST's delivery is easy to use and straightforward.
	Tangibles	The hotel HIS/SST's area is clean, odorless, and pleasant.
		The hotel HIS/SST's waiting area is spacious and visually appealing.
		The hotel HIS/SST's area is comfortable.
	Excellence	The hotel HIS/SST's deliver the promised services.
		The hotel HIS/SST's support deals with the problems immediately.
		The hotel HIS/SST's is oriented to have people's best interests at heart.
		The hotel HIS/SST's function is informative.
		The hotel HIS/SST's deals with requests promptly.
	People Standards	In this hotel, people behave appropriately.
		In this hotel, people communicate well.
		The hotel cares about people.
		This hotel can handle people's needs.
		This hotel set very high standards for service.
In this hotel, if the people are happy, excellent service delivery will result.		
Support	Commodity-related support	The hotel has a clean and sanitary environment.
		The hotel has quiet and comfortable rooms.
		The hotel has safe and reliable facilities.
	People support	In this hotel, people have the power to solve some problems.
	Service Technology Support	The hotel uses technology to build and develop higher levels of service quality.
		The hotel uses high levels of technology to support the HIS/SST's delivery.
	Service Failure Prevention	The hotel prevent service delivery problems rather than reacting to situations once they occur
		The hotel actively listen(s) to people's opinions and comments.
	Service Failure Recovery	The hotel has an excellent people complaint handling system for service follow-up
		The hotel has established problem-solving teams to enhance our ability to resolve service breakdowns
		The hotel provides follow-up service to confirm that service is being delivered properly

Dimensions	Sub-dimensions	Final eDelphi instrument (69 items)
Trust	Trust in Technology	People believe hotels offering the SST's system are reliable.
		People can rely on the services offered by a trusted hotel, SST's system is reliable.
	Trust in Organization	This hotel is trustworthy.
		People had complete confidence in this hotel
		The hotel cares about people's problems.
Characteristics	Enjoyment	People feel good being able to use the hotel HIS/SST's.
		The hotel HIS/SST's provides all the necessary information.
		The hotel HIS/SST's exceed expectations.
	Functionality	The hotel HIS/SST's delivery is quick.
		The service delivery process of the hotel is error-free.
	Security/Privacy	People feel safe in HIS/SST's delivery.
		The hotel states a clear privacy policy when people use SST's.
		People feel secure supplying relevant information when using the HIS/SSTs.
		People have access to the service delivery policy information.
	Convenience	It is easy and convenient to use the hotel HIS/SST's.
	Customization	The hotel HIS/SST's understand people specific needs.
		The hotel HIS/SST's have features that are personalized for people.
Co-creation	People Feedback	In this hotel, people give feedback when they have a good or innovative idea.
		The people's feedback of the hotel is valuable.
		The hotel asks for feedback opinions to evaluate SSTs/HIS delivery quality.
		The hotel provides information about opinions of service quality
		In this hotel, opinions and complaints are taken into account to improve a service problem or failure.
	Participation behaviour	The hotel provides the information appropriate and necessary to ensure good service delivery.
		People carry out what is requested.
	Citizenship behavior	In this hotel, people advise about the service.
		People recommend the hotel.
		In this hotel, people have a certain tolerance towards possible service failures.
In this hotel, people help with problems beyond what is expected or required.		
Motivation	Empowerment	People's opinions have a more significant impact on hotel decision-making.

Legend: own elaboration | software: excel

5.4.2 Research 2 - Principal component analysis and Exploratory factor analysis

At this stage, we used the SurveyMonkey software to build (May 2022) the final 69-item questionnaire (Table 5.XVII) and created three different collectors, to assess the measurement properties of the instrument. In the first collector, from the 332 questionnaires distributed (June 2022), 130 valid responses were obtained (sample 1,

n=130). In this phase we collected, data from different people, namely hotel employees (n=58) and customers (n=72). These collector responses were obtained , personally and locally, on a tablet or on paper, in several hotels of the Portuguese Vila Galé hospitality group. In the second collector, 9712 email invitations were sent to an international list of hotel employees and customers (August 2022). We received 282 valid responses (sample 2, n=282), from hotel employees (n=74) and customers (n=208). We used sample 1 to conduct the Principal Component Analysis (PCA) and sample 2 to conduct the Exploratory factorial analysis (EFA). Participants answered to 69 items on a continuous 5-point Likert scale (from strongly disagree to strongly agree) as well as to some demographic questions (see Table 5.XV).

Table 5.XVIII - Scale development: Number of items and samples

	Initial Pool	1st eDelphi Round	2nd eDelphi Round	3rd eDelphi Round	Principal component analysis	Exploratory factor analysis	Confirmatory factor analysis
Items	136	122	94	69	55	31	31
eDelphi experts		n=21	n=21	n=21			
Sample					n=130	n=282	n=270

Legend: own elaboration | software: excel

The procedure described by Matsunaga (2010) was pursued for this analysis. For the initial item reduction, the PCA was conducted on sample 1 (n = 130). As the factors were expected to be correlated, the Promax oblique rotation method was used. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was suitable for PCA (KMO =0.896). Statistical criteria for item retention were a primary factor loading above 0.6 and a second highest factor loading below 0.4 (Matsunaga, 2010; Henson & Roberts, 2006). Items with lower primary factor loadings were deleted one by one, resulting in a remaining set of 55 items spread over six factors, explaining 66.6% of the variance.

Principal axis factoring with oblique rotation was used to identify dimensions and sub-dimensions in People-Technology hybrid service climate measurements, as suggested by Hair, Black, Babin, Anderson & Tatham (2006). Based on sample 2 (n = 282), we extracted all items with a factor loading value greater than 0.40 and factors with eigenvalues equal to or greater than 1.00. To sum up, we excluded (n=24) items for not having a saturation greater than 0.40 in any of the extracted factors.

Table 5.XIX - Factor analysis results

31-Items	Factor loading				
	Co-Creation	Standards	Characteristics	Support	Global
Feedback 4 The hotel provides information about opinions of service quality.	0,89				
Recovery 3 The hotel provides follow-up service to confirm that service is being delivered properly.	0,86				
Recovery 2 The hotel has established problem-solving teams to enhance our ability to resolve service breakdowns.	0,75				
Feedback 5 In this hotel, opinions and complaints are taken into account to improve a service problem or failure.	0,70				
Recovery 1 The hotel has an excellent people complaint handling system for service follow-up.	0,68				
Feedback 3 The hotel asks for feedback opinions to evaluate SSTs/HIS delivery quality.	0,62				
Prevention 1 The hotel prevent service delivery problems rather than reacting to situations once they occur.	0,49				
Participation 1 The hotel provides the information appropriate and necessary to ensure good service delivery.	0,49				
TrustOrg 1 The hotel is trustworthy.	0,45				
TrustOrg 3 The hotel cares about people's problems.	0,42				
Tangible 3 The hotel HIS/SST's waiting area is spacious and visually appealing.		0,76			
Competence 2 The hotel HIS/SST's is handled with people's specific needs.		0,76			
Reliability 1 The hotel HIS/SST's accurately verifies the reservation requests.		0,76			
Tangible 1 The hotel HIS/SST's area is comfortable.		0,73			
Competence 1 The hotel HIS/SST's is fast and delivered in a short time.		0,71			
Excellence 1 The hotel HIS/SST's deliver the promised services.		0,68			
Tangible 2 The hotel HIS/SST's area is clean, odorless, and pleasant.		0,66			
Excellence 4 The hotel HIS/SST's deals with requests promptly.		0,57			
Excellence 2 The hotel HIS/SST's support deals with the problems immediately.		0,46			
Security 3 The hotel states a clear privacy policy when people use SST's.			0,77		
Custom 1 The hotel HIS/SST's have features that are personalized for people.			0,71		
Enjoy 1 People feel good being able to use the hotel HIS/SST's.			0,69		
Security 1 People feel safe in HIS/SST's delivery.			0,69		
Security 2 People feel secure supplying relevant information when using the HIS/SST's.			0,68		
TrustTech 1 People believe hotels offering the SST's system are reliable.			0,67		
Commodity 2 The hotel has quiet and comfortable rooms.				0,76	
Commodity 1 The hotel has a clean and sanitary environment.				0,73	
Commodity 3 The hotel has safe and reliable facilities.				0,58	
Global1 People at the hotel seem to be trying to provide a good service climate.					0,83
Global 3 The service climate of the hotel is good.					0,82
Global 2 The facility layout of the hotel seems to have considered people's convenience.					0,72

Eigenvalues	16,02	1,86	1,46	1,31	1,16
% of variance	50,59	4,88	3,51	3,21	2,67
Cumulative %	50,59	55,46	58,98	62,19	64,85
Cronbach's Alpha	0,93	0,94	0,90	0,87	0,87
KMO	0,94				

Legend: own elaboration | software: spss

A total of 5 dimensions, explaining 64.85% of the variance, were extracted (Kaiser-Meyer-Olkin (KMO) = 0.935, $p < 0.001$). This can be classified as very good, thus confirming the factorability of the intercorrelation matrix.

As presented in Table 5.XIX, we identified 5 dimensions with 31 items. The Cronbach's α for each factor ranged between 0.87 and 0.94, above the minimum of 0.7 (Nunnally & Bernstein, 1994), suggesting that P-THSC is a reliable scale with good internal consistency.

The five dimensions were labelled as follows: co-creation, standards, characteristics, support, and global service climate. The dimensions of orientation and motivation were removed after EFA. The two sub-dimensions (trust in technology and trust in an organization) of dimension trust were co-creation and characteristics. The co-creation is the factor with a more significant eigenvalue. The sub-dimension citizenship behavior was removed from this dimension. The sub-dimensions efficiency, delight, and people standards were removed from dimension standards. On the characteristics dimension, functionality, design, and convenience sub-dimensions were removed. In the support dimension, the only sub-dimension maintained was commodity-related support.

5.4.3 Research 3 - Confirmatory factor analysis and reliability of the instrument

Confirmatory Factors Analysis (CFA) was used to test the reliability and validity of the measurement model (figure 5.52). For the cross-validation of the five-factor results from the PCA and EFA, a higher-order CFA was conducted on a new dataset using IBM AMOS 28, because this method is according to the assumption of a multi-dimensional people-technology hybrid service climate. For the CFA, we collected one sample of 270 international participants (hotel customers, $n=170$ and hotel employees, $n=100$), invited and managed by SurveyMonkey, who answered (October 2022) the 31-item P-THSC scale.

The maximum likelihood method was applied and from from the 31 items, the 5 factors analyzed indicated that latent constructs were also present. For this CFA, we choose the comparative fit index (CFI), the incremental fit index (IFI), the Tucker-Lewis index (TLI), the chi-square/degrees of freedom (CMIN/DF), and the root-mean-square error of approximation index (RMSEA), to verify and determine the fit of the measurement. As can be seen in Table 5.XX, the CFA shower an acceptable model fit (CFI = 0.94, IFI = 0.94, TLI = 0.93, CMIN/DF = 2.00, RMSEA = 0.06).

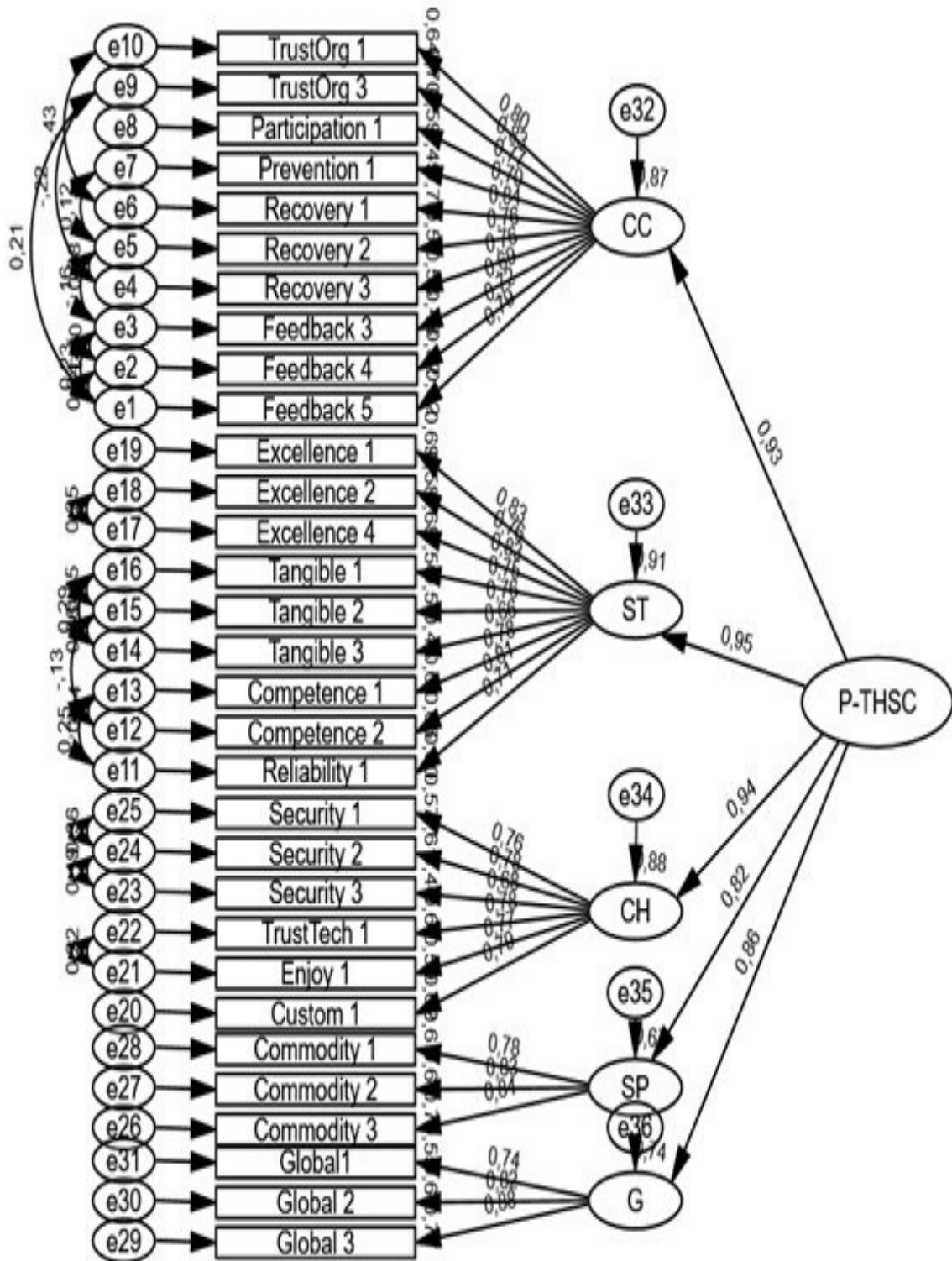
Table 5.XX - Measurement model fit

Measure	Recommended Value	Result
CFI	>0.90 (Hu & Bentler, 1999)	0.94
IFI	>0.90 (Byrne, 2001)	0.94
TLI	>0.90 (Byrne, 2001)	0.93
CMIN/DF	<5.00 (Loo & Thorpe, 2000)	2.00
RMSEA	<0.08 (Hair et al., 2006)	0.06

Notes: CFI = comparative fit index; IFI = incremental fit index; TLI: Tucker-Lewis index; RMSEA = root mean square error of approximation; CMIN/DF = Chi-square/degrees of freedom. Legend: own elaboration | software: amos

Table 5.XXI shows a few measures that are useful for establishing convergent and discriminant validity and reliability: Composite Reliability (CR), Average Variance Extracted (AVE), Maximum Shared Variance (MSV), and Average Shared Variance (ASV). The convergent validity of the measurement model was confirmed by significant loading coefficients ranging from 0.66–0.88 (p 's < 0.001) (Tomarken & Waller, 2005; Kline, 2005), and composite reliability (CR) values all greater than the recommended 0.7 (Nunnally & Bernstein, 1994). Furthermore, the average variance extracted values (Fornell & Larcker, 1981a) were above 0.50 (Bagozzi & Yi, 1988) for all five factors. To sum up, following Fornell & Larcker (1981b) criterion, the P-THSC construct possessed adequate convergent validity.

Figure 5.52 - CFA measurement model



Notes: P-THSC = People-Technology Hybrid Service Climate; CC = Co-Creation; ST = Standards; CH = Characteristics; SP = Support; G = Global Service Climate.

Table 5.XXI - Confirmatory Factor Analysis Results

Factor	Factor Loading	Composite reliability (CR)	Average variance extracted (AVE)	Maximum shared variance (MSV)	Average shared variance (ASV)
Co-Creation		0,93	0,59	0,50	0,40
Feedback5	0,79				
Feedback4	0,72				
Feedback3	0,69				
Recovery3	0,76				
Recovery2	0,76				
Recovery1	0,84				
Prevention1	0,70				
Participation1	0,77				
TrustOrg3	0,84				
TrustOrg1	0,80				
Factor	Factor Loading	Composite reliability (CR)	Average variance extracted (AVE)	Maximum shared variance (MSV)	Average shared variance (ASV)
Standards		0,93	0,59	0,50	0,44
Reliability1	0,71				
Competence2	0,81				
Competence1	0,78				
Tangible3	0,66				
Tangible2	0,76				
Tangible1	0,75				
Excellence4	0,83				
Excellence2	0,76				
Excellence1	0,83				

Factor	Factor Loading	Composite reliability (CR)	Average variance extracted (AVE)	Maximum shared variance (MSV)	Average shared variance (ASV)
Characteristics		0,89	0,58	0,49	0,41
Custom1	0,79				
Enjoy1	0,77				
TrustTech1	0,78				
Security3	0,68				
Security2	0,78				
Security1	0,76				
Support		0,86	0,67	0,34	0,26
Commodity3	0,84				
Commodity2	0,83				
Commodity1	0,78				
Global Service Climate		0,86	0,67	0,44	0,36
Global3	0,88				
Global2	0,82				
Global1	0,74				

Legend: own elaboration | software: Amos

The results show correlations between the five factors of the people and technology hybrid service climate (Table 5.XXII) statistically significant and below the threshold of 0.85 (Kline, 2005), indicating that the discriminant validity was supported (Smith, Milberg & Burke, 1996). Moreover, the maximum shared variance (MSV), average shared variance (ASV), and average variance extracted (AVE) for each factor (Table 5.XXI) suggest there is discriminant validity because $MSV < AVE$ and $ASV < AVE$ (Fornell & Larcker, 1981a; Marôco, 2010; Hair, 2009; Lowry & Gaskin, 2014).

The EFA and CFA results showed convergent and discriminant validity for the people-technology hybrid service climate construct.

Table 5.XXII - Correlations among the five dimensions

Fator	1	2	3	4	5
1. Co-Creation	1,00				
2. Standards	0,71	1,00			
3. Characteristics	0,68	0,70	1,00		
4. Support	0,47	0,58	0,54	1,00	
5. Global Service Climate	0,64	0,66	0,63	0,45	1,00

Legend: own elaboration | software: Amos

5.5 Discussion and Conclusions

In line with Bowen & Schneider (2014) and Kandampully *et al.* (2016) future research agendas, this research contributes to the knowledge gap on the service climate concept as applied to people–technology hybrid models in the hospitality industry. The construct of the people-technology hybrid service climate is conceptualized and operationalized, resulting in a compact scale that measures, from people’s perspective, the service climate in hospitality with hybrid service delivery. After the scale purification and confirmative phase, namely principal component analysis, exploratory factor analysis, and confirmatory factor analysis, a 31-item scale is grouped into five dimensions: Co-Creation, Standards, Support, Characteristics, and Global Service Climate.

People and technology are essential resources for hospitality and are the underlying concepts of the People–Technology Hybrid Service Climate (P-THSC) scale (Kandampully *et al.*, 2016). The first, considered the most valuable resources in hospitality, include both customers and employees (Gruman & Saks, 2011; Kusluvan, Kusluvan, Ilhan & Buyruk, 2010), and therefore should be maximized through the best service climate a hotel can supply (Bowen & Schneider, 2014) in order to have a positive effect on job satisfaction, customer experience and hotel performance (Chiang, Birtch & Cai, 2014). The second resource, technology, acts as an enabler to engage both customers and employees towards the co-creation of value. In different service deliveries, technology offers new ways for customers to participate in the service production and to engage as co-creators of an experience which provides a unique competitive advantage (Jaakkola & Alexander, 2014; Verleye, 2015).

Co-creation. This dimension comprises trust, service failure prevention, recovery, participation behavior, and feedback. The co-creation dimension shows the most significant predictive value overall and is associated with service-dominant logic (SDL) theory. According to this theory, service is the basis of any exchange (Vargo & Lusch, 2008). Under this perspective, the value thus offered by the hotel is always co-created by the hotel and its customers. The S-D logic can also provide a framework for understanding how value gets co-created by the hotel, customers, employees, and technology within a system, in such a way that differentiates the hotels' offers from the competition's (Lusch & Vargo, 2014). From this view, a service system is a dynamic value co-creation configuration of resources (Vargo & Lusch, 2016). Social exchange theory (SET) explains the relationships between people and emphasizes reciprocity as a rule of social behavior (Madison & Eva, 2019). The SET can be used in service climate research to explain how people create and perceive service climate (Blau, 1964).

Shulga, Busser, Bai & Kim (2021) results supported trust networks as necessary for successful hospitality value co-creation. Trust is a prerequisite and influences value co-creation (Abela & Murphy, 2008; Shulga, Busser & Kim, 2018). So, service systems are vital to delivering continuous service quality, and when hotel service systems fail and make reoccurring and typical mistakes, people lose confidence and trust (Lytle *et al.*, 1998). Breaches of trust significantly impact the hotel service's reputation, perceived value, and sustainability, but it is possible to reduce the risk perceived by customers, creating reputation strategies to increase customer trust and confidence (Palácios, de Almeida, *et al.*, 2021).

A hotel service orientation requires service systems with service failure prevention and service failure recovery because they are determinants of service quality (Kralj & Solnet, 2010). To (Lytle *et al.*, 1998), service quality delivery depends on service systems design and how well it functions. (Bagherzadeh, Rawal, Wei & Torres, 2020) show how customers deal with a failure after participating in the initial service delivery process (Sugathan, Ranjan & Mulky, 2017). After a service failure happens, the customers expect to undergo a service recovery. Customers who initially contribute to service delivery have a greater expectation of service recovery (Heidenreich, Wittkowski, Handrich & Falk, 2015). When customer co-creation in service delivery is high, customers have greater service recovery expectations after a service failure. Participation in recovery is the most

effective way to countervail the higher expectations and improve service outcomes (Bagherzadeh *et al.*, 2020).

According to (Motowidlo & Van Scotter, 1994) theoretical framework, task performance are behaviors necessary for the successful completion of service delivery, and contextual performance is not required for successful value co-creation. In our instrument, we identified two types of co-creation behavior. Participation behavior is necessary for successful value co-creation. Citizenship behavior, in our instrument, consists of feedback (Yi & Gong, 2013), which is voluntary and provides extraordinary value to the hotel but is not necessarily required for value co-creation (Yi, Natarajan & Gong, 2011; Groth, 2005). In this regard, people who participate in service delivery should engage in some behavior classified as participation behavior to perform their expected behaviors without which value co-creation could not be completed successfully and do not have to exhibit behaviors such as feedback for the successful completion of service co-creation (Yi & Gong, 2013, 2008). Feedback helps hotels to improve the service creation process in the long run (Groth, 2005). The hotel can benefit significantly from people's suggestions for better service.

Standards. This dimension comprises reliability, competence, tangibility, and service excellence. It is our scale's second most significant predictive value overall. This dimension focuses on the key factors which are expected to be followed as service standards for delivering high-quality and excellent services in hospitality (Hoang *et al.*, 2018; Susskind *et al.*, 2007). In line with (Park *et al.*, 2022) results, our scale conceptualized reliability, competence, and tangibility as essential to quality, applicable to HIS and SST delivery options, and positively influencing peoples' service perceptions.

Moreover, this dimension measures the delivery of a level of service quality that results in very high satisfaction, culminating in service excellence (Johnston, 2007; Solnet & Kandampully, 2008). The random utility theory (RUT) explains the relationship between satisfaction and service excellence by describing peoples' desire to maximize their total utility (Safaeimanesh *et al.*, 2021). (Lytle *et al.*, 1998) Lytle related service climate to service excellence. In a hybrid service delivery context, where people are co-producers and co-creators of value, service excellence must be a P-THSC standard.

Characteristics. Lancaster's consumer theory (LCT) explains that people's utility/satisfaction gained from SSTs is due to SSTs' characteristics (Safaeimanesh *et al.*,

2021). Security and privacy concepts are essential when people interact with technology, especially during service delivery (Theodosiou *et al.*, 2019). On the other hand, assurance is one of the vital service quality dimensions of SSTs (Orel & Kara, 2014) and refers to customers' perception regarding the trust in technology and reputation of the SSTs providers (Lin & Hsieh, 2011). (Dabholkar, 1994) introduces the concept of enjoyment, which customers would most likely use if they find it enjoyable. So, using SSTs increases their usage and enhances people's appreciation. Customization is adapting the service delivery to people's specific needs and preferences for more satisfaction (Lovelock & Patterson, 2015), which is related to high-quality service delivery (Ostrom & Lacobucci, 1995).

Support. Commodity-related support is one dimension of customer-perceived service climate (Borucki & Burke, 1999) and refers to perceived support of commodities concerning types, quality, and commodity updates. This support lays the foundation for a successful service value realization and inevitably influences customers' evaluation of service experiences (Padhi & Aggarwal, 2011). This support dimension is essential because it is related to feedback citizenship behavior. Commodity-related support should be recognized if hotels expect customers to show more voluntary citizenship behaviors. Managers should manage organizational service orientation and commodity-related support to enhance customer psychological empowerment. (Qiu *et al.*, 2021a).

Global. Global Service Climate provides a unique dimension of the hotel's service climate. Following (Schneider *et al.*, 1998), this dimension measures the fundamental aspect of service climate. In our P-THSC scale, global service climate has a good relationship with all other dimensions because it relates to people's global perceptions.

5.5.1 Theoretical and practical implications

This paper has both theoretical and practical implications. By presenting the P-TSHSC Scale, the present article contributes to the theoretical understanding and measurement of service climate in hospitality. This instrument presents the innovative perspective of measuring the service climate, focusing on people's perceptions, aggregating the customer-perceived and employee perceptions of service climate in hotels with hybrid service delivery. Our findings align with the study of (Kandampully *et al.*,

2016) hybrids model, demonstrating that co-creation is vital to measure a people-technology hybrid service climate. This study confirms the utility of the service climate framework as a critical issue related to the co-creation of value in service management. Accordingly, it provides insights into the importance of creating trusty relationships with people to co-create hybrid services.

In line with the Resource-Based viewpoint theory (RBV), the resources possessed by a hospitality organization are the primary determinants of its performance (Barney, 2001). In our instrument, co-creation through people and technology is a dimension of service climate and provides a unique hotel competitive advantage.

The research provides the hospitality industry with new insights. Furthermore, hotels and researchers now have access to the P-THSC Scale, a compact assessment tool that measures service climate in hotels with hybrid service delivery. The scale can also help hotel managers develop appropriate strategies to improve the service climate, impacting both employees and clients' perceived value, satisfaction, and loyalty, ultimately improving the revenue and profitability of the hotel. The periodical measurement of service climate may help hotel managers carry out changes over time.

5.5.2 Limitations and suggestions for future research

Several limitations to these studies need to be acknowledged. The P-THSC Scale measures people's perception of an intangible construct. These concepts are difficult to measure as they are intangible and influenced by cultural, personal and situational factors. However, much literature has attempted to capture this type of construct in instruments. The scale was developed and validated based on an international e-Delphi panel with Portuguese and international samples. The reduced dimension of the samples is one of these limitations. We adopted the modified Delphi method and established the initial dimensions, sub-dimensions, and items for the the pilot questionnaire, based on systematic literature reviews. A different starting point could have led to a different scale. Choosing a specific international panel of experts to carry out the e-Delphi phase perhaps introduces a bias into the measure due to the expert's previous experience and areas of interest.

The scale's development begins our understanding of the topic, and the proposed scale is open to future refinement. Future research might empirically validate the scale

through new and different studies with larger samples and different types of people with contextual and cultural variances to increase its scope and reinforce its validity and accuracy. Future research could consider applying this scale to study people-technology hybrid service climate in other organizations with hybrid service delivery. Future research should test P-THSC within a more comprehensive model that integrates theoretically related constructs, namely the Guest–Server Exchange Model (Susskind *et al.*, 2018b) or the Service–Profit Chain Model (Solnet *et al.*, 2018). It could also examine the role of motivational and personal variables, which would help managers maximize their business success.

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Declaration Of Interest

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

Author Agreement

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CHAPTER 6 – GENERAL CONCLUSION

6.1 Conclusion

This thesis aimed to develop and validate a new instrument to measure the service climate in hotels with hybrid service deliveries, in models with human interaction, and with self-service technologies. In this way, we contribute to a future research agenda in the field of service climate by innovating and developing a new people-technology hybrid service climate research framework.

Between 2019 and 2022, 6 research works were carried out, compiled into four studies for publication in specialized scientific journals. The first three studies present a complete literature review of three different perspectives. They summarize and synthesize the theory, fundamentals, concepts, and definitions, as well as the antecedents and consequents of the construct. In the fourth study, consisting of 3 research works, we developed the new measurement instrument through the eDelphi methodology and validated it in its 31-item English version.

The first research work focused on the relationship between service climate and customer experiences; therefore, a systematic review of the literature on service quality and service climate in hospitality was carried out. The principal results are that the service climate is associated with leadership, motivation, and performance and that the new trends of the service climate are related to big data, technology, and trust.

The focus for the second work then arises from the identification of trust as an emerging field with a growing number of academic publications in this area. In this way, we carried out a literature review on the concept, using the three knowledge structures: conceptual, intellectual, and social. The main results of this research appreciate that trust is one of the most tolerant variables in digital technologies, and keywords such as satisfaction, loyalty, and service quality are related.

The objective of the third study was to provide a complete systematic review of the literature on service climate in hospitality to identify the construct as a sustainable competitive advantage. The results showed the existence of two perceptions of service climate. On the one hand, the traditional perception of the service climate by the employee and a new perception, closely associated with technologies, with the customer's

perception. With the adoption of technologies for service delivery purposes, customers are part of the service itself, and as such, they also perceive the service climate.

The service climate scales are predominantly oriented towards measuring employee perceptions of hotels providing human interaction services. The existence of hotels adopting hybrid service delivery systems, with the typical human interactions and with SSTs, raised the question of how we could measure, and in what perception, the service climate since hotel employees and customers co-create the service itself. Study four aims to develop and validate an instrument that accurately measures hotel service climate where employees and customers co-create service deliveries.

P-THSCS has an original, innovative, and compact outlook. It measures people's (employees and customers) perceptions of hybrid service deliveries (Human Interaction Service and Self-Service Technologies). The results show a relevant management tool, both at the level of employees (human resources management), customers (commercial and marketing management), and financial performance (financial management), that can be used by hotel managers as well as by the entire academy.

Then we mention some limitations which may pave the way for future investigations.

Limitations and suggestions for future research

The most significant limitation of our three research works was the sample size. It is not very easy to find mechanisms to enhance responses. Ensuring the representativeness of the samples is a complex task in terms of time, material, and financial resources. Despite the protocol with Vila Galé, the response and validation rate were insufficient. It should be noted that in one of the response collectors, more than 5000 invitations were sent by email, with a nominal success rate. Thus, it is evident that a larger sample could change the final results. However, considering the objectives of the studies, the collected data proved to be sufficient to validate the instrument.

With the development of this new instrument, there is the possibility of establishing a new future research agenda based on the new P-THSC framework. Initially, it is essential to refine the scale and test. Validate the scale through new and different studies with larger samples and different types of people with contextual and cultural variations to increase the scope and reinforce its validity and accuracy. Another line of future investigation will be the expansion of the presented framework.

In terms of antecedents, it is essential to develop studies in the area of HRM practices, namely through High-Performance Work Systems or Psychological Safety, as well as the study of motivational variables, such as Work Engagement and well-being variables that may eventually influence people in order to meet sustainable objectives. Within the many antecedents theoretically related to the construct, we stress the need to study leadership variables, servant leadership, ethical leadership or positive affective leadership, or even other variables. Understanding how organizational practices of empowerment, autonomy, responsibility, and communication affect the people-technology hybrid service climate is critical. From a perspective of consequences, still within hospitality, future research should test the P-THSC inserted in broader models that integrate theoretically related constructions. It will be beneficial to investigate the impact of this instrument on models such as the guest-server exchange model or the service profit chain model to test the influence on Revenue Management or Financial Performance.

Future investigations are not intended to exhaust the richness and diversity of themes as important as the service climate and try to help understand how organizations can become more effective and competitive.

APPENDIX 1 – Scale Development eDelphi Rounds

		e-Delphi						
Dimensions	Sub-dimensions	1st Round questionnaire (136 items)	1st Round Experts Comments and Relevance	2nd Round questionnaire (122 items)	2nd Round Experts Comments and IQR	3rd Round Questionnaire (94 items)	3rd Round IQR	Final Questionnaire (69 items)
Global	People Service Climate	1. People at the hotel seem to be trying to provide a good service climate.	change the word people to employees/satff (they are meant to provide good service, not customers	1. People at the hotel seem to be trying to provide a good service climate.		People at the hotel seem to be trying to provide a good service climate.		People at the hotel seem to be trying to provide a good service climate.
		2. The facility layout of the hotel seems to be considering people's convenience.		2. The facility layout of the hotel seems to be considering people's convenience.		The facility layout of the hotel seems to have considered people's convenience.		The facility layout of the hotel seems to have considered people's convenience.
		3. Overall, the service climate of the hotel is good.	remove the word overall.	3. The service climate of the hotel is good.		The service climate of the hotel is good.		The service climate of the hotel is good.
		4. People's job knowledge and skills to deliver superior quality service have a positive rate in this hotel.	change the word people to employees/staff (they are meant to provide good service, not customers).	4. People's job knowledge and skills to deliver superior quality service have a positive rate in this hotel.		People's job knowledge and skills to deliver superior quality service have a positive rate in this hotel.		People's job knowledge and skills to deliver superior quality service have a positive rate in this hotel.
		5. In this hotel, there are efforts to measure and track the HIS/SST's delivery quality.	I think the items it should be more clear. "In this hotel"? "The hotels"? Which one's?	5. In this hotel, there are efforts to measure and track the HIS/SST's delivery quality.		There are efforts to measure and track the HIS/SST's delivery quality in this hotel.		There are efforts to measure and track the HIS/SST's delivery quality in this hotel.
		6. Overall, the quality of HIS/SST's delivery provided by this hotel is good.	remove the word overall	6. The quality of HIS/SST's delivery provided by this hotel is good.		The quality of HIS/SST's delivery provided by this hotel is good.		The quality of HIS/SST's delivery provided by this hotel is good.
		7. In this hotel, the role shown by people in supporting the service quality effort has a positive rate.	change the word people to hotel employees (they are meant to provide good service, not customers).	7. In this hotel, the role shown by people in supporting the service quality effort has a positive rate.	Excluded IQR			
		8. In this hotel, there are effective communication efforts to people.	change word to people into among hotel people	8. In this hotel, there are effective communication efforts among hotel people.	Excluded IQR			
		9. The hotel's tools, technology, and other resources to support superior quality service delivery have a good rate.		9. The hotel's tools, technology, and other resources to support superior quality service delivery have a good rate.		The hotel's tools, technology, and other resources to support superior quality service delivery have a good rate.		The hotel's tools, technology, and other resources to support superior quality service delivery have a good rate.

e-Delphi								
Dimensions	Sub-dimensions	1st Round questionnaire (136 items)	1st Round Experts Comments and Relevance	2nd Round questionnaire (122 items)	2nd Round Experts Comments and IQR	3rd Round Questionnaire (94 items)	3rd Round IQR	Final Questionnaire (69 items)
Orientation	People Orientation	1.The hotel makes policies and regulations to benefit people.		1.The hotel makes policies and regulations to benefit people.		The hotel makes policies and regulations to benefit people.	Excluded IQR	
		2.The hotel takes people's feedback seriously.	remove this statement (it is similar to statement 7)	2.The hotel takes people's feedback seriously.		The hotel takes people's feedback seriously.		The hotel takes people's feedback seriously.
		3.The hotel completes people's orders quickly.	remove this statement (it is similar to statement 7)	3.The hotel completes people's orders quickly.		The hotel completes people's orders quickly.		The hotel completes people's orders quickly.
		4.The hotel has clear ideas about people and their needs.		4.The hotel has clear ideas about people and their needs.		The hotel has clear ideas about people and their needs.	Excluded IQR	
		5.Superior quality service is emphasized as the best way to keep people in this hotel.	i think that good communication, fair wages and a career path are what make a competent worker stay at the hotel.	5.Superior service quality is emphasized as the best way to keep people in this hotel.		Superior service quality is emphasized as the best way to keep people in this hotel.		Superior service quality is emphasized as the best way to keep people in this hotel.
		6.The hotel provides information about people's evaluations of the superior quality service delivery.		6.The hotel provides information about people's evaluations of the superior quality service delivery.		Excluded IQR		
		7.The hotel always responds to people's feedback and suggestions quickly.	Excluded Comments and Relevance					

e-Delphi								
Dimensions	Sub-dimensions	1st Round questionnaire (136 items)	1st Round Experts Comments and Relevance	2nd Round questionnaire (122 items)	2nd Round Experts Comments and IQR	3rd Round Questionnaire (94 items)	3rd Round IQR	Final Questionnaire (69 items)
Standards	Reliability	1.The hotel HIS/SST's performed the right service the first time.	i didn't understand this item, so i put it last. this item is meaningless in this topic.	1.The hotel HIS/SST's performed the right service at the first attempt.		The hotel HIS/SST's perform the right service on the first attempt.	Excluded IQR	
		2.The hotel HIS/SST's delivery process was consistent.		2.The hotel HIS/SST's delivery process was consistent.		The hotel HIS/SST's delivery process is consistent.	Excluded IQR	
		3. The time it took to check in/check out was not too long.		3. The time it took to check in/check out was not too long.		The time it took to check in/check out is not too long.		The time it took to check in/check out is not too long.
		4. The hotel HIS/SST's accurately verifies the reservation requests.		4. The hotel HIS/SST's accurately verifies the reservation requests.		The hotel HIS/SST's accurately verifies the reservation requests.		The hotel HIS/SST's accurately verifies the reservation requests.
	Competence	1.The hotel HIS/SST's are informative during the delivery process.		1.The hotel HIS/SST's are informative during the delivery process.	Excluded IQR			
		2.The hotel HIS/SST's are handled with people's specific needs.	remove the word in.	2.The hotel HIS/SST's are handled with people's specific needs.		The hotel HIS/SST's is handled with people's specific needs.		The hotel HIS/SST's is handled with people's specific needs.
		3.The hotel HIS/SST's was fast and delivered in a short time.		3.The hotel HIS/SST's was fast and delivered in a short time.		The hotel HIS/SST's is fast and delivered in a short time.		The hotel HIS/SST's is fast and delivered in a short time.
		4.In this hotel consistent service performance is important.		4.This hotel consistent service performance is important.	Excluded IQR			
	Efficiency	1.The hotel HIS/SST's delivery was easy.		1.The hotel HIS/SST's delivery was easy.		The hotel HIS/SST's delivery is easy to use and straightforward.		The hotel HIS/SST's delivery is easy to use and straightforward.
		2.The hotel HIS/SST's delivery requires minimal effort to complete.		2.The hotel HIS/SST's delivery requires minimal effort to complete.	Excluded IQR			
		3.The hotel HIS/SST's delivery was simple.		3.The hotel HIS/SST's delivery was simple.	Excluded: what's easy isn't simple?			
		4.The hotel HIS/SST's express checkout was available.	the item dealing with checkout is inappropriate.Excluded Comments and Relevance					

e-Delphi								
Dimensions	Sub-dimensions	1st Round questionnaire (136 items)	1st Round Experts Comments and Relevance	2nd Round questionnaire (122 items)	2nd Round Experts Comments and IQR	3rd Round Questionnaire (94 items)	3rd Round IQR	Final Questionnaire (69 items)
	Tangibles	1.The hotel HIS/SST's had modern-looking equipment.	modernity looking is not an essential characteristic but an image and marketing dimension.Excluded Comments and Relevance					
		2.The hotel HIS/SST's area was clean, odorless, and pleasant.		2.The hotel HIS/SST's area was clean, odorless, and pleasant.		The hotel HIS/SST's area is clean, odorless, and pleasant.		The hotel HIS/SST's area is clean, odorless, and pleasant.
		3.The hotel HIS/SST's waiting area was spacious and visually appealing.		3.The hotel HIS/SST's waiting area was spacious and visually appealing.		The hotel HIS/SST's waiting area is spacious and visually appealing.		The hotel HIS/SST's waiting area is spacious and visually appealing.
		4.The hotel HIS/SST's area is comfortable.		4.The hotel HIS/SST's area is comfortable.		The hotel HIS/SST's area is comfortable.		The hotel HIS/SST's area is comfortable.
	Delight	1.The hotel HIS/SST's was entertaining.	item that can confuse whoever is taking the survey	1.The hotel HIS/SST's was entertaining.		The hotel HIS/SST's is entertaining.	Excluded IQR	
		2.The hotel HIS/SST's was enjoyable.	the statements 1,2,3 are all almost the same... pick one (e.g. the hotel his/sst's was enjoyable.)	2.The hotel HIS/SST's was enjoyable.		The hotel HIS/SST's is enjoyable.	Excluded IQR	
		3.The hotel HIS/SST's was fun.	item that can confuse whoever is taking the survey					
		4.People was delighted with the hotel HIS/SST's	people were delighted with the hotel his/sst's.	4.People were delighted with the hotel HIS/SST's	Excluded IQR			
	Excellence	1.The hotel HIS/SST's delivered the promised services.		1.The hotel HIS/SST's delivered the promised services.		The hotel HIS/SST's deliver the promised services.		The hotel HIS/SST's deliver the promised services.
		2.The hotel HIS/SST's support deals with the problems immediately.		2.The hotel HIS/SST's support deals with the problems immediately.		The hotel HIS/SST's support deals with the problems immediately.		The hotel HIS/SST's support deals with the problems immediately.
		3.The hotel HIS/SST's is oriented to have people's best interests at heart.		3.The hotel HIS/SST's is oriented to have people's best interests at heart.		The hotel HIS/SST's is oriented to have people's best interests at heart.		The hotel HIS/SST's is oriented to have people's best interests at heart.
		4.The hotel HIS/SST's function was informative.		4.The hotel HIS/SST's function was informative.		The hotel HIS/SST's function is informative.		The hotel HIS/SST's function is informative.
		5.The hotel HIS/SST's deals with requests promptly.		5.The hotel HIS/SST's deals with requests promptly.		The hotel HIS/SST's deals with requests promptly.		The hotel HIS/SST's deals with requests promptly.

e-Delphi								
Dimensions	Sub-dimensions	1st Round questionnaire (136 items)	1st Round Experts Comments and Relevance	2nd Round questionnaire (122 items)	2nd Round Experts Comments and IQR	3rd Round Questionnaire (94 items)	3rd Round IQR	Final Questionnaire (69 items)
	People Standards	1.In this hotel, people are friendly and always smile.	change the word people to employees/staff	1.In this hotel, people are friendly and always smile.	Excluded: In this hotel, people are friendly and always smile (item) seems to have nothing to do with standards. Delete, if possible.			
		2.In this hotel, people behave appropriately.	change the word people to employees/staff	2.In this hotel, people behave appropriately.		In this hotel, people behave appropriately.		In this hotel, people behave appropriately.
		3.In this hotel, people communicate well.		3.In this hotel, people communicate well.		In this hotel, people communicate well.		In this hotel, people communicate well.
		4.The hotel cares about people.	I had difficulties in ordering these items because I would put some of them in the same position. They are too many.	4.The hotel cares about people.	The statement "the hotel cares about people" is repetitive in another dimension. In this dimension, the verbs are in the present, in the last dimension they were in the past. It would be beneficial if all the verbs stay in the same tense.	The hotel cares about people.		The hotel cares about people.
		5.In this hotel, people are very careful.	the statement is incomplete ... people are very careful of what???? also, change the word very careful to cautions	5.In this hotel, people are cautious with each other.	Excluded IQR			
		6.This hotel can handle people's needs.		6.This hotel can handle people's needs.		This hotel can handle people's needs.		This hotel can handle people's needs.
		7.In this hotel, people and technology are the keys to providing excellent service delivery.						
		8.This hotel set very high standards for service.		8.This hotel set very high standards for service.		This hotel set very high standards for service.		This hotel set very high standards for service.
		9.In this hotel, no service delivery is so well done that it couldn't be done better	remove this statement. you have positively asked this question in other dimensions Excluded Comments and Relevance					
		10.In this hotel, if the people are happy, excellent service delivery will result.	merge this statement with statement 7.	10.In this hotel, if the people are happy, excellent service delivery will result.		In this hotel, if the people are happy, excellent service delivery will result.		In this hotel, if the people are happy, excellent service delivery will result.

e-Delphi								
Dimensions	Sub-dimensions	1st Round questionnaire (136 items)	1st Round Experts Comments and Relevance	2nd Round questionnaire (122 items)	2nd Round Experts Comments and IQR	3rd Round Questionnaire (94 items)	3rd Round IQR	Final Questionnaire (69 items)
Support	Commodity-related support	1.The hotel has a clean and sanitary environment.		1.The hotel has a clean and sanitary environment.		The hotel has a clean and sanitary environment.		The hotel has a clean and sanitary environment.
		2.The hotel has quiet and comfortable rooms.		2.The hotel has quiet and comfortable rooms.		The hotel has quiet and comfortable rooms.		The hotel has quiet and comfortable rooms.
		3.The hotel has safe and reliable facilities.		3.The hotel has safe and reliable facilities.		The hotel has safe and reliable facilities.		The hotel has safe and reliable facilities.
		4.The hotel has a reliable network.		4.The hotel has a reliable network.		The hotel has a reliable network.	Excluded IQR	
	People support	1.The hotel has enough people to service delivery.	change the word people to employees/staff.	1.The hotel has enough people in service delivery functions.	Excluded IQR			
		2.The hotel has some places that offer support to people.	.change the word people to guests/customers	2.The hotel has some places that offer support to people.		The hotel has some places that offer support to people.	Excluded IQR	
		3.In this hotel, people have the power to solve some problems.	change the word people to employees/staff... also, give examples of what kind of problems	3.In this hotel, people have the power to solve some problems.		In this hotel, people have the power to solve some problems.		In this hotel, people have the power to solve some problems.
		4.In this hotel, people are very helpful.	remove this statement; you have mentioned it in another dimension. Excluded Comments and Relevance					
		5.People rely heavily on hotel support.	give examples of the kind of support Excluded Comments and Relevance					
		6.People provide important work-related information and advice that make service delivery easier.		6.People provide important work-related information and advice that make service delivery easier.		People provide important work-related information and advice that make service delivery easier.	Excluded IQR	
		7.People can count on hotel support to do the "right thing" in service delivery.	this statement is similar to statement 5... better if you merge them into a statement.	7.People rely heavily on hotel support to do the "right thing" in service delivery.	Excluded IQR			

e-Delphi								
Dimensions	Sub-dimensions	1st Round questionnaire (136 items)	1st Round Experts Comments and Relevance	2nd Round questionnaire (122 items)	2nd Round Experts Comments and IQR	3rd Round Questionnaire (94 items)	3rd Round IQR	Final Questionnaire (69 items)
	Service Technology Support	1.The hotel enhances service capabilities through the use of "state of the art" technology.		1.The hotel enhances service capabilities through the use of "state of the art" technology.	Excluded IQR			
		2.The hotel use technology to build and develop higher levels of service quality.	the hotel uses technology to build and develop higher levels of service quality.	2.The hotel uses technology to build and develop higher levels of service quality.		The hotel uses technology to build and develop higher levels of service quality.		The hotel uses technology to build and develop higher levels of service quality.
		3.The hotel uses high levels of technology to support the HIS/SST's delivery.		3.The hotel uses high levels of technology to support the HIS/SST's delivery.		The hotel uses high levels of technology to support the HIS/SST's delivery.		The hotel uses high levels of technology to support the HIS/SST's delivery.
		4.The hotel uses high levels of technology to support the efforts of people.		4.The hotel uses high levels of technology to support the efforts of people.	Excluded IQR			
	Service Failure Prevention	1.The hotel prevent people problems	remove this statement. statement 2 covers it.	1.The hotel prevent people problems	Excluded IQR			
		2.The hotel prevent service delivery problems rather than reacting to situations once they occur.	change the word prevent to reduces.	2.The hotel prevent service delivery problems rather than reacting to situations once they occur		The hotel prevent service delivery problems rather than reacting to situations once they occur		The hotel prevent service delivery problems rather than reacting to situations once they occur
		3.The hotel actively listen to people	listen(s)... add the following: people's opinions and comments.	3.The hotel actively listen(s) to people's opinions and comments.		The hotel actively listen(s) to people's opinions and comments.		The hotel actively listen(s) to people's opinions and comments.
	Service Failure Recovery	1.The hotel has an excellent people complaint handling system for service follow-up		1.The hotel has an excellent people complaint handling system for service follow-up		The hotel has an excellent people complaint handling system for service follow-up		The hotel has an excellent people complaint handling system for service follow-up
		2.The hotel has established problem-solving groups to enhance our ability to resolve service breakdowns	change the word groups to teams.	2.The hotel has established problem-solving teams to enhance our ability to resolve service breakdowns		The hotel has established problem-solving teams to enhance our ability to resolve service breakdowns		The hotel has established problem-solving teams to enhance our ability to resolve service breakdowns
		3.The hotel provide follow-up service to confirm that service is being delivered properly		3.The hotel provide follow-up service to confirm that service is being delivered properly		The hotel provides follow-up service to confirm that service is being delivered properly		The hotel provides follow-up service to confirm that service is being delivered properly
		4.The hotel provides people with an explicit service quality guarantee		4.The hotel provides people with an explicit service quality guarantee	Excluded: The hotel provides people with an explicit service quality guarantee (item) seems to be the most irrelevant in the facet (dimension) being evaluated. Delete if possible.			

e-Delphi								
Dimensions	Sub-dimensions	1st Round questionnaire (136 items)	1st Round Experts Comments and Relevance	2nd Round questionnaire (122 items)	2nd Round Experts Comments and IQR	3rd Round Questionnaire (94 items)	3rd Round IQR	Final Questionnaire (69 items)
Trust	Trust in Technology	1. People believe hotels offering the SST's system are reliable.	statements 1, 2, and 4 are similar in content.... need to merge them into a statement.	1. People believe hotels offering the SST's system are reliable.		People believe hotels offering the SST's system are reliable.		People believe hotels offering the SST's system are reliable.
		2. The services provided by a trusted hotel SST's system are reliable.		2. People can rely on the services offered by a trusted hotel SST's system are reliable.		People can rely on the services offered by a trusted hotel, SST's system is reliable.		People can rely on the services offered by a trusted hotel, SST's system is reliable.
		3. The hotel provides an SST's system that can perform services that commit to the users.		3. The hotel provides an SST's system that can perform services that commit to the users.		The hotel provides an SST's system that can perform services that commit to the users.	Excluded IQR	
		4. People can rely on the hotel SST's system to execute their services reliably.	Excluded Comments and Relevance					
		5. Given the state of the existing hotel SST's system, technology-related errors are quite rare.		5. Given the state of the existing hotel SST's system, technology-related errors are quite rare.		Given the state of the existing hotel SST's system, technology-related errors are quite rare.	Excluded IQR	
		6. The hotel SST's system is very reliable.	remove this statement. Excluded Comments and Relevance					
	Trust in Organization	1. This hotel is trustworthy.	remove this statement.	1. This hotel is trustworthy.		This hotel is trustworthy.		This hotel is trustworthy.
		2. People had complete confidence in this hotel		2. People had complete confidence in this hotel		People had complete confidence in this hotel		People had complete confidence in this hotel
		3. This hotel always treats people fairly and justly.		3. This hotel always treats people fairly and justly.		This hotel always treats people fairly and justly.	Excluded IQR	
		4. This hotel always keeps one's promise.		4. This hotel always keeps one's promise.		This hotel always keeps one's promise.	Excluded IQR	
		5. The hotel always backs people up.		5. The hotel always backs people up.		The hotel always backs people up.	Excluded IQR	
		6. The hotel being honest with people.	change this wording: the hotel being honest with people, the hotel being honest with people... (has been)	6. The hotel has been honest with people.		The hotel has been honest with people.	Excluded IQR	
		7. The hotel awards and supports people.		7. The hotel awards and supports people.		The hotel awards and supports people.	Excluded IQR	
		8. The hotel cares about people's problems.		8. The hotel cares about people's problems.		The hotel cares about people's problems.		The hotel cares about people's problems.
		9. The hotel policies related to service delivery are trustworthy.		9. The hotel policies related to service delivery are trustworthy.	Excluded: The last statement is related to the first one. Maybe you should keep these 2 statements together.			

e-Delphi								
Dimensions	Sub-dimensions	1st Round questionnaire (136 items)	1st Round Experts Comments and Relevance	2nd Round questionnaire (122 items)	2nd Round Experts Comments and IQR	3rd Round Questionnaire (94 items)	3rd Round IQR	Final Questionnaire (69 items)
Characteristics	Enjoyment	1.The hotel HIS/SST's operations were interesting.		1.The hotel HIS/SST's operations were interesting.	What do you want to mean with the word "interesting" in the first statement? It is not clear.	The hotel HIS/SST's operations are delightful.	Excluded IQR	
		2.People feel good being able to use the hotel HIS/SST's.		2.People feel good being able to use the hotel HIS/SST's.	Why are the verbs in the past tense? Only in the second statement, the verb is in the present. I think that you should revise it and keep all the verbs in present.	People feel good being able to use the hotel HIS/SST's.		People feel good being able to use the hotel HIS/SST's.
		3.The hotel HIS/SST's provided all the necessary information.	perhaps the wording in "the hotel his/sst's provided all the necessary information" can be more related to enjoyment.	3.The hotel HIS/SST's provide all the necessary information.		The hotel HIS/SST's provides all the necessary information.		The hotel HIS/SST's provides all the necessary information.
		4.The hotel HIS/SST's exceeded expectations.		4.The hotel HIS/SST's exceed expectations.		The hotel HIS/SST's exceed expectations.		The hotel HIS/SST's exceed expectations.
	Functionality	1.The hotel HIS/SST's delivery is quick.		1.The hotel HIS/SST's delivery is quick.		The hotel HIS/SST's delivery is quick.		The hotel HIS/SST's delivery is quick.
		2.The hotel HIS/SST's delivery is simple, easy.		2.The hotel HIS/SST's delivery is simple, easy, and smooth.		The hotel HIS/SST's delivery is smooth.	Excluded IQR	
		3.The hotel HIS/SST's require little effort.	remove this statement. it is already mentioned in another dimension	3.The hotel HIS/SST's require little effort.	What do you want to mean with the word "effort" in the third statement? It is not clear.			
		4.The hotel HIS/SST's delivery is smooth.	remove this statement. it is already mentioned in another dimension.					
		5.The service delivery process of the hotel is error-free.		5.The service delivery process of the hotel is error-free.		The service delivery process of the hotel is error-free.		The service delivery process of the hotel is error-free.

e-Delphi								
Dimensions	Sub-dimensions	1st Round questionnaire (136 items)	1st Round Experts Comments and Relevance	2nd Round questionnaire (122 items)	2nd Round Experts Comments and IQR	3rd Round Questionnaire (94 items)	3rd Round IQR	Final Questionnaire (69 items)
	Security/Privacy	1. People feel safe in HIS/SST's delivery.		1. People feel safe in HIS/SST's delivery.		People feel safe in HIS/SST's delivery.		People feel safe in HIS/SST's delivery.
		2. The hotel states a clear privacy policy when people use SST's.		2. The hotel states a clear privacy policy when people use SST's.		The hotel states a clear privacy policy when people use SST's.		The hotel states a clear privacy policy when people use SST's.
		3. People personal information is treated confidentially.		3. People personal information is treated confidentially.	Excluded: People personal information is treated confidentially (item 2) seems to me to be irrelevant in this specific facet			
		4. People feel secure supplying relevant information when using the HIS/SST's.		4. People feel secure supplying relevant information when using the HIS/SST's.		People feel secure supplying relevant information when using the HIS/SST's.		People feel secure supplying relevant information when using the HIS/SST's.
	Design	1. The layout of the hotel HIS/SST's is aesthetically appealing.		1. The layout of the hotel HIS/SST's is aesthetically appealing.	Excluded IQR			
		2. The hotel HIS/SST's appear to use up-to-date technology.		2. The hotel HIS/SST's appear to use up-to-date technology.		The hotel HIS/SST's appear to use up-to-date technology.	Excluded IQR	
		3. The hotel HIS/SST's process are clearly defined.	don't see if this is related to this sub-dimension. Excluded Comments and Relevance					
		4. People have access to the service delivery policy information.	these items are not related with design if I understood,	4. People have access to the service delivery policy information.		People have access to the service delivery policy information.		People have access to the service delivery policy information.

e-Delphi								
Dimensions	Sub-dimensions	1st Round questionnaire (136 items)	1st Round Experts Comments and Relevance	2nd Round questionnaire (122 items)	2nd Round Experts Comments and IQR	3rd Round Questionnaire (94 items)	3rd Round IQR	Final Questionnaire (69 items)
	Convenience	1.The hotel HIS/SST's have operating hours convenient to customers.	change the word customers to employees/staff.	1.The hotel HIS/SST's have operating hours convenient to people.		The hotel HIS/SST's have operating hours convenient to people.	Excluded IQR	
		2.The hotel HIS/SST's delivery is easy, convenient, and accessible.	i guess this is mentioned in another dimesion. Excluded Comments and Relevance					
		3.It is easy and convenient to reach the hotel HIS/SST's.		3.It is easy and convenient to reach the hotel HIS/SST's.	Excluded IQR			
		4.It is easy and convenient to use the hotel HIS/SST's.		4.It is easy and convenient to use the hotel HIS/SST's.		It is easy and convenient to use the hotel HIS/SST's.		It is easy and convenient to use the hotel HIS/SST's.
	Customization	1.The hotel HIS/SST's understand people specific needs.		1.The hotel HIS/SST's understand people specific needs.		The hotel HIS/SST's understand people specific needs.		The hotel HIS/SST's understand people specific needs.
		2.The hotel HIS/SST's have features that are personalized for people.		2.The hotel HIS/SST's have features that are personalized for people.		The hotel HIS/SST's have features that are personalized for people.		The hotel HIS/SST's have features that are personalized for people.
		3.The hotel HIS/SST's have people best interests at heart		3.The hotel HIS/SST's have people best interests at heart	Excluded IQR			
		4.The hotel defines its HIS/SST's from people's perspectives.		4.The hotel defines its HIS/SST's from people's perspectives.	Excluded IQR			

e-Delphi								
Dimensions	Sub-dimensions	1st Round questionnaire (136 items)	1st Round Experts Comments and Relevance	2nd Round questionnaire (122 items)	2nd Round Experts Comments and IQR	3rd Round Questionnaire (94 items)	3rd Round IQR	Final Questionnaire (69 items)
Co-creation	People Feedback	1.In this hotel, people give feedback when they have a good or innovative idea.		1.In this hotel, people give feedback when they have a good or innovative idea.		In this hotel, people give feedback when they have a good or innovative idea.		In this hotel, people give feedback when they have a good or innovative idea.
		2.In this hotel, people give feedback when they experience a service problem or failure.	statements 2 and 7 are similar in content. better to merge as a statement. Excluded Comments and Relevance					
		3.Overall, the people's feedback of the hotel is valuable.		3.The people's feedback of the hotel is valuable.		The people's feedback of the hotel is valuable.		The people's feedback of the hotel is valuable.
		4.The hotel asks for feedback opinions to evaluate SSTs/HIS delivery quality.		4.The hotel asks for feedback opinions to evaluate SSTs/HIS delivery quality.		The hotel asks for feedback opinions to evaluate SSTs/HIS delivery quality.		The hotel asks for feedback opinions to evaluate SSTs/HIS delivery quality.
		5.The hotel provides information about opinions of service quality		5.The hotel provides information about opinions of service quality		The hotel provides information about opinions of service quality		The hotel provides information about opinions of service quality
		6.The hotel provides information about complaints		6.The hotel provides information about complaints	Excluded IQR			
		7.Opinions and complaints are taken into account to improve service delivery.	statements 2 and 7 are similar in content. better to merge as a statement.	7.In this hotel, opinions and complaints are taken into account to improve a service problem or failure.		In this hotel, opinions and complaints are taken into account to improve a service problem or failure.		In this hotel, opinions and complaints are taken into account to improve a service problem or failure.

e-Delphi								
Dimensions	Sub-dimensions	1st Round questionnaire (136 items)	1st Round Experts Comments and Relevance	2nd Round questionnaire (122 items)	2nd Round Experts Comments and IQR	3rd Round Questionnaire (94 items)	3rd Round IQR	Final Questionnaire (69 items)
	Participation behaviour	1.The hotel offers all the information for service delivery, either online or offline.		1.The hotel offers all the information for service delivery, either online or offline.	Excluded: Item 1 (2) seems to me redundant to others.			
		2.The hotel provides the information appropriate and necessary to ensure good service delivery.		2.The hotel provides the information appropriate and necessary to ensure good service delivery.		The hotel provides the information appropriate and necessary to ensure good service delivery.		The hotel provides the information appropriate and necessary to ensure good service delivery.
		3.People carry out what is requested.	change the world people to employees/staff	3.People carry out what is requested.		People carry out what is requested.		People carry out what is requested.
		4.People have an agreeable attitude.		4.People have an agreeable attitude.		People have an agreeable attitude.	Excluded IQR	
	Citizenship behavior	1.In this hotel, people advise about the service.		1.In this hotel, people advise about the service.		In this hotel, people advise about the service.		In this hotel, people advise about the service.
		2.People recommend the hotel.		2.People recommend the hotel.		People recommend the hotel.		People recommend the hotel.
		3.In this hotel, people have a certain tolerance towards possible service failures.		3.In this hotel, people have a certain tolerance towards possible service failures.		In this hotel, people have a certain tolerance towards possible service failures.		In this hotel, people have a certain tolerance towards possible service failures.
		4.In this hotel, people help with problems beyond what is expected or required.		4.In this hotel, people help with problems beyond what is expected or required.		In this hotel, people help with problems beyond what is expected or required.		In this hotel, people help with problems beyond what is expected or required.
		5.In this hotel, people are incentivized to go above and beyond the call of duty on service delivery.	change the word people to employees/saff.	5.In this hotel, people are incentivized to go above and beyond the call of duty on service delivery.		In this hotel, people are incentivized to go above and beyond the call of duty on service delivery.	Excluded IQR	

e-Delphi								
Dimensions	Sub-dimensions	1st Round questionnaire (136 items)	1st Round Experts Comments and Relevance	2nd Round questionnaire (122 items)	2nd Round Experts Comments and IQR	3rd Round Questionnaire (94 items)	3rd Round IQR	Final Questionnaire (69 items)
Motivation	Empowerment	1. People have significant autonomy in the hotel HIS/SST's delivery.	change word people to employees/staff	1. People have significant autonomy in the hotel HIS/SST's delivery.		People have significant autonomy in the hotel HIS/SST's delivery.	Excluded IQR	
		2. People can freely manage behaviors during hotel HIS/SST's delivery.	More than 5/6 options is difficult to order because creates the sensation that you are considering different levels of relevance for different things, in spite being the same category - in this case motivation. For instance, I don't see substantive difference between sentence 1 and 2, both depend on the grade of autonomy given.	2. People can freely manage behaviors during hotel HIS/SST's delivery.	Excluded IQR			
		3. People have the freedom and authority to act independently on HIS/SST's delivery.		3. People have the freedom and authority to act independently on HIS/SST's delivery.		People have the freedom and authority to act independently on HIS/SST's delivery.	Excluded IQR	
		4. People have significant influence over what happens in the hotel HIS/SST's delivery.		4. People have significant influence over what happens in the hotel HIS/SST's delivery.		People have significant influence over what happens in the hotel HIS/SST's delivery.	Excluded IQR	
		5. People have a great sense of control over the hotel HIS/SST's delivery.		5. People have a great sense of control over the hotel HIS/SST's delivery.	Excluded IQR			
		6. People's opinions have a more significant impact on hotel decision-making.		6. People's opinions have a more significant impact on hotel decision-making.		People's opinions have a more significant impact on hotel decision-making.		People's opinions have a more significant impact on hotel decision-making.
		7. People feel good about the hotel's opportunity to influence HIS/SST's delivery.		7. People feel good about the hotel's opportunity to influence HIS/SST's delivery.	Excluded IQR			

APPENDIX 2 – Scale Development Purification

			Scale Purification		SPSS Label
Dimensions	Sub-dimensions	Final Questionnaire (69 items)	Principal Component Analysis	55 items to Exploratory Factorial Analysis	
Global	People Service Climate	People at the hotel seem to be trying to provide a good service climate.		People at the hotel seem to be trying to provide a good service climate.	Global 1
		The facility layout of the hotel seems to have considered people's convenience.		The facility layout of the hotel seems to have considered people's convenience.	Global2
		The service climate of the hotel is good.		The service climate of the hotel is good.	Global3
		People's job knowledge and skills to deliver superior quality service have a positive rate in this hotel.	Excluded PCA		
		There are efforts to measure and track the HIS/SST's delivery quality in this hotel.		There are efforts to measure and track the HIS/SST's delivery quality in this hotel.	Global4
		The quality of HIS/SST's delivery provided by this hotel is good.		The quality of HIS/SST's delivery provided by this hotel is good.	Global5
		The hotel's tools, technology, and other resources to support superior quality service delivery have a good rate.		The hotel's tools, technology, and other resources to support superior quality service delivery have a good rate.	Global6

			Scale Purification		SPSS Label
Dimensions	Sub-dimensions	Final Questionnaire (69 items)	Principal Component Analysis	55 items to Exploratory Factorial Analysis	
Orientation	People Orientation				
		The hotel takes people's feedback seriously.	Excluded PCA		
		The hotel completes people's orders quickly.		The hotel completes people's orders quickly.	Orientation1
		Superior service quality is emphasized as the best way to keep people in this hotel.		Superior service quality is emphasized as the best way to keep people in this hotel.	Orientation2

			Scale Purification		SPSS Label
Dimensions	Sub-dimensions	Final Questionnaire (69 items)	Principal Component Analysis	55 items to Exploratory Factorial Analysis	
Standards	Reliability				
		The time it took to check in/check out is not too long.	Excluded PCA		
		The hotel HIS/SST's accurately verifies the reservation requests.		The hotel HIS/SST's accurately verifies the reservation requests.	Reliability1
	Competence				
		The hotel HIS/SST's is handled with people's specific needs.		The hotel HIS/SST's is handled with people's specific needs.	Competence2
		The hotel HIS/SST's is fast and delivered in a short time.		The hotel HIS/SST's is fast and delivered in a short time.	Competence1
	Efficiency	The hotel HIS/SST's delivery is easy to use and straightforward.	Excluded PCA		

		Scale Purification		SPSS Label
Sub-dimensions	Final Questionnaire (69 items)	Principal Component Analysis	55 items to Exploratory Factorial Analysis	
Tangibles				
	The hotel HIS/SST's area is clean, odorless, and pleasant.		The hotel HIS/SST's area is clean, odorless, and pleasant.	Tangible2
	The hotel HIS/SST's waiting area is spacious and visually appealing.		The hotel HIS/SST's waiting area is spacious and visually appealing.	Tangible3
	The hotel HIS/SST's area is comfortable.		The hotel HIS/SST's area is comfortable.	Tangible1
Delight				
Excellence	The hotel HIS/SST's deliver the promised services.		The hotel HIS/SST's deliver the promised services.	Excellence1
	The hotel HIS/SST's support deals with the problems immediately.		The hotel HIS/SST's support deals with the problems immediately.	Excellence2
	The hotel HIS/SST's is oriented to have people's best interests at heart.		The hotel HIS/SST's is oriented to have people's best interests at heart.	Excellence3
	The hotel HIS/SST's function is informative.	Excluded PCA		
	The hotel HIS/SST's deals with requests promptly.		The hotel HIS/SST's deals with requests promptly.	Excellence4

		Scale Purification		SPSS Label
Sub-dimensions	Final Questionnaire (69 items)	Principal Component Analysis	55 items to Exploratory Factorial Analysis	
People Standards				
	In this hotel, people behave appropriately.		In this hotel, people behave appropriately.	Pstandard1
	In this hotel, people communicate well.	Excluded PCA		
	The hotel cares about people.		The hotel cares about people.	Pstandard2
	This hotel can handle people's needs.		This hotel can handle people's needs.	Pstandard3
	This hotel set very high standards for service.		This hotel set very high standards for service.	Pstandard4
	In this hotel, if the people are happy, excellent service delivery will result.		In this hotel, if the people are happy, excellent service delivery will result.	Pstandard5

		Scale Purification		SPSS Label
Sub-dimensions	Final Questionnaire (69 items)	Principal Component Analysis	55 items to Exploratory Factorial Analysis	
Commodity-related support	The hotel has a clean and sanitary environment.		The hotel has a clean and sanitary environment.	Commodity1
	The hotel has quiet and comfortable rooms.		The hotel has quiet and comfortable rooms.	Commodity2
	The hotel has safe and reliable facilities.		The hotel has safe and reliable facilities.	Commodity3
People support				
	In this hotel, people have the power to solve some problems.		In this hotel, people have the power to solve some problems.	Psupport1

		Scale Purification		SPSS Label
Sub-dimensions	Final Questionnaire (69 items)	Principal Component Analysis	55 items to Exploratory Factorial Analysis	
Service Technology Support				
	The hotel uses technology to build and develop higher levels of service quality.		The hotel uses technology to build and develop higher levels of service quality.	Stsupport1
	The hotel uses high levels of technology to support the HIS/SST's delivery.	Excluded PCA		
Service Failure Prevention				
	The hotel prevent service delivery problems rather than reacting to situations once they occur		The hotel prevent service delivery problems rather than reacting to situations once they occur	Prevention1
	The hotel actively listen(s) to people's opinions and comments.	Excluded PCA		
Service Failure Recovery				
	The hotel has an excellent people complaint handling system for service follow-up		The hotel has an excellent people complaint handling system for service follow-up	Recovery1
	The hotel has established problem-solving teams to enhance our ability to resolve service breakdowns		The hotel has established problem-solving teams to enhance our ability to resolve service breakdowns	Recovery2
	The hotel provides follow-up service to confirm that service is being delivered properly		The hotel provides follow-up service to confirm that service is being delivered properly	Recovery3

		Scale Purification		SPSS Label
Sub-dimensions	Final Questionnaire (69 items)	Principal Component Analysis	55 items to Exploratory Factorial Analysis	
Trust in Technology	People believe hotels offering the SST's system are reliable.		People believe hotels offering the SST's system are reliable.	TrustTech1
	People can rely on the services offered by a trusted hotel, SST's system is reliable.		People can rely on the services offered by a trusted hotel, SST's system is reliable.	TrustTech2
Trust in Organization	This hotel is trustworthy.		This hotel is trustworthy.	TrustOrg1
	People had complete confidence in this hotel		People had complete confidence in this hotel	TrustOrg2
	The hotel cares about people's problems.		The hotel cares about people's problems.	TrustOrg3

		Scale Purification		SPSS Label
Sub-dimensions	Final Questionnaire (69 items)	Principal Component Analysis	55 items to Exploratory Factorial Analysis	
Enjoyment				
	People feel good being able to use the hotel HIS/SST's.		People feel good being able to use the hotel HIS/SST's.	Enjoy1
	The hotel HIS/SST's provides all the necessary information.	Excluded PCA		
	The hotel HIS/SST's exceed expectations.		The hotel HIS/SST's exceed expectations.	Enjoy2
Functionality	The hotel HIS/SST's delivery is quick.		The hotel HIS/SST's delivery is quick.	Function1
	The service delivery process of the hotel is error-free.		The service delivery process of the hotel is error-free.	Function2

		Scale Purification		SPSS Label
Sub-dimensions	Final Questionnaire (69 items)	Principal Component Analysis	55 items to Exploratory Factorial Analysis	
Security/Privacy	People feel safe in HIS/SST's delivery.		People feel safe in HIS/SST's delivery.	Security1
	The hotel states a clear privacy policy when people use SST's.		The hotel states a clear privacy policy when people use SST's.	Security3
	People feel secure supplying relevant information when using the HIS/SSTs.		People feel secure supplying relevant information when using the HIS/SSTs.	Security2
Design				
	People have access to the service delivery policy information.	Excluded PCA		

		Scale Purification		SPSS Label
Sub-dimensions	Final Questionnaire (69 items)	Principal Component Analysis	55 items to Exploratory Factorial Analysis	
Convenience				
	It is easy and convenient to use the hotel HIS/SST's.	Excluded PCA		
Customization	The hotel HIS/SST's understand people specific needs.	Excluded PCA		
	The hotel HIS/SST's have features that are personalized for people.		The hotel HIS/SST's have features that are personalized for people.	Custom1

			Scale Purification		SPSS Label
Dimensions	Sub-dimensions	Final Questionnaire (69 items)	Principal Component Analysis	55 items to Exploratory Factorial Analysis	
Co-creation	People Feedback	In this hotel, people give feedback when they have a good or innovative idea.		In this hotel, people give feedback when they have a good or innovative idea.	Feedback1
		The people's feedback of the hotel is valuable.		The people's feedback of the hotel is valuable.	Feedback2
		The hotel asks for feedback opinions to evaluate SSTs/HIS delivery quality.		The hotel asks for feedback opinions to evaluate SSTs/HIS delivery quality.	Feedback3
		The hotel provides information about opinions of service quality		The hotel provides information about opinions of service quality	Feedback4
		In this hotel, opinions and complaints are taken into account to improve a service problem or failure.		In this hotel, opinions and complaints are taken into account to improve a service problem or failure.	Feedback5

			Scale Purification		SPSS Label
Dimensions	Sub-dimensions	Final Questionnaire (69 items)	Principal Component Analysis	55 items to Exploratory Factorial Analysis	
	Participation behaviour				
		The hotel provides the information appropriate and necessary to ensure good service delivery.		The hotel provides the information appropriate and necessary to ensure good service delivery.	Participation1
		People carry out what is requested.		People carry out what is requested.	Participation2
	Citizenship behavior	In this hotel, people advise about the service.	Excluded PCA		
		People recommend the hotel.		People recommend the hotel.	Citizen1
		In this hotel, people have a certain tolerance towards possible service failures.		In this hotel, people have a certain tolerance towards possible service failures.	Citizen2
		In this hotel, people help with problems beyond what is expected or required.	Excluded PCA		

			Scale Purification		SPSS Label
Dimensions	Sub-dimensions	Final Questionnaire (69 items)	Principal Component Analysis	55 items to Exploratory Factorial Analysis	
Motivation	Empowerment				
		People's opinions have a more significant impact on hotel decision-making.		People's opinions have a more significant impact on hotel decision-making.	Empower1

APPENDIX 3 – The 31 items of P-THSCS

Commodity	The hotel has a clean and sanitary environment.
	The hotel has quiet and comfortable rooms.
	The hotel has safe and reliable facilities.
Competence	The hotel HIS/SST's is fast and delivered in a short time.
	The hotel HIS/SST's is handled with people's specific needs.
Customization	The hotel HIS/SST's have features that are personalized for people.
Enjoyment	People feel good being able to use the hotel HIS/SST's.
Excellence	The hotel HIS/SST's deliver the promised services.
	The hotel HIS/SST's support deals with the problems immediately.
	The hotel HIS/SST's deals with requests promptly.
Feedback	The hotel asks for feedback opinions to evaluate SSTs/HIS delivery quality.
	The hotel provides information about opinions of service quality.
	In this hotel, opinions and complaints are taken into account to improve a service problem or failure.
Global	The facility layout of the hotel seems to have considered people's convenience.
	The service climate of the hotel is good.
	People at the hotel seem to be trying to provide a good service climate.
Participation	The hotel provides the information appropriate and necessary to ensure good service delivery.
Prevention	The hotel prevent service delivery problems rather than reacting to situations once they occur.
Recovery	The hotel has an excellent people complaint handling system for service follow-up.
	The hotel has established problem-solving teams to enhance our ability to resolve service breakdowns.
	The hotel provides follow-up service to confirm that service is being delivered properly.
Reliability	The hotel HIS/SST's accurately verifies the reservation requests.
Security	People feel safe in HIS/SST's delivery.
	People feel secure supplying relevant information when using the HIS/SSTs.
	The hotel states a clear privacy policy when people use SST's.
Tangible	The hotel HIS/SST's area is comfortable.
	The hotel HIS/SST's area is clean, odorless, and pleasant.
	The hotel HIS/SST's waiting area is spacious and visually appealing.
Trust	The hotel is trustworthy.
	The hotel cares about people's problems.
	People believe hotels offering the SST's system are reliable.