

Clusters of topics and research designs in peer-to-peer accommodation platforms

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Abstract

This article is a literature review exploring academic papers focused on peer-to-peer accommodation platforms (P2P APs). The sample includes 189 published works indexed in the Scopus and Web of Science databases, identified using 72 queries. The research question underlying the study is centered on clusters of topics and their research designs. Using a cross-citation approach, nine clusters are identified, and a research map is proposed structured around six blocks. These include i) conceptual papers analyzing the sharing economy (cluster 1); ii) demand-side papers based on the consumer behavior approach (cluster 2); iii) host papers exploring spatial patterns (cluster 3) and researching determinants of performance (cluster 4); iv) host-guest relationships, based on Airbnb (cluster 5) and on noncommercial platforms (cluster 9); v) social impact of P2P APs (cluster 6), and vi) effects generated on hotels, including economic impact (cluster 7) and comparison of Airbnb and hotel strategies (cluster 8).

Keywords: Peer-to-peer accommodation platforms; cross-citation; network analysis; Airbnb; cluster analysis; literature review; state of the art

1 INTRODUCTION

Peer-to-peer accommodation platforms (P2P APs) are a growing and promising area of inquiry, fueled by the rising number of travelers using commercial and noncommercial platforms (Aznar et al., 2017). The sharing mechanism is an old phenomenon in hospitality and tourism (H&T), as the rentals of “zimmer” in Europe confirm (Pizam, 2014); however, the technology has created new opportunities, developing into a global business (Germann Molz, 2013). Many studies attest that Airbnb’s value is greater than that of other traditional hotel giants, such as Marriott (Bashir & Verma, 2016).

This exponential growth has posed new questions, given the effects generated by the new supply of existing hotels (Zervas, Proserpio & Byers, 2017). Another question is the impact on residents and especially on long-term rentals (Gant, 2016). As is usual for a new business model, some researchers have analyzed the regulation problems (Wegmann & Jiao, 2017). Other studies have explored whether these travelers are different from traditional guests and, if so, what the key differences are. This in turn has raised some new questions such as whether sharing guests are really interested in authenticity and what they are really sharing. P2P APs are usually described as disruptor innovators

(Guttentag, 2015); however, other articles suggest that sharing platforms also represent an important opportunity for existing hotels (Richard & Cleveland, 2016).

These and many other questions have created a new research stream, the so-called sharing economy, based on some convergent theoretical approaches, such as collaborative consumption (Möhlmann, 2015), collaborative commerce (Sigala, 2017), relational tourism (Forno & Garibaldi, 2015), the experience economy (Paulauskaite et al., 2017), P2P consumption (Dredge & Gyimóthy, 2015), the moral economy (Germann Molz, 2013), cultural capitalism (O'Regan & Choe, 2017), and crowd-based capitalism (Belarmino et al., 2017). In this paper, we use the expression “P2P APs” to refer to both commercial (profit-oriented) and noncommercial (non-profit-oriented) firms. A clear example of profit P2P AP is Airbnb, while CouchSurfing for noncommercial. In the first case, guests pay the rental, while in the second one, the transaction is not based on monetary value.

The H&T sector represents an ideal industry for the sharing economy and constitutes a research frontier (Cheng, 2016b). However, the related academic literature is often described as “fragmented” (Cheng, 2016b) and mainly composed of “grey literature” (Garau-Vadell, Gutiérrez-Taño & Díaz-Armas, 2018), such as commissioned research reports and conference articles (Cheng, 2016a), while the number of academic papers published in peer-reviewed journals are few (Sigala, 2017). This is partially confirmed by some previous literature reviews. Cheng (2016a) included only 10 papers based on the H&T industry in a sample comprising 66 articles. Heo (2016) identified several research areas and concluded that the sharing business model is still in its infancy. Sigala (2017) suggested the need to integrate this research stream, which is mainly atheoretical, with some well-established paradigms, such as co-creation, service-dominant-logic, and consumer culture theory. Akbar and Tracogna (2018) enlarged this list, adding transaction cost theory.

However, as presented and discussed later, P2P APs are an area of growing inquiry, attracting each year an increasing number of academic papers. For example, in 2017, the number of published papers included in our sample was double compared to 2016. Therefore, now is an appropriate time to take stock of the research generated over the past years. The present paper aims to explore the current academic literature with the goal of identifying topics and the underlying research design. Both points are crucial. The development of a new literature stream (P2P APs) requires mapping the mostly relevant sub-area of inquiry. Therefore, the following research question is stated:

RQ 1. What are the main themes related to P2P APs?

Focusing on the second point, the research design (as later discussed) identifies what instruments researchers use to explore different topics. Therefore, the second research question guiding this paper is as follows

RQ 2. What is the underlying research design?

2 LITERATURE REVIEW

2.1 Previous reviews and conceptual paper on P2P APs and sharing economy

As anticipated in the introduction, the P2P APs and more generally the sharing economy are attracting a large number of studies. Within these studies, some literature reviews and conceptual papers were proposed. The studies were identified in our sample paper (as presented in the methodology) and in some previous papers, as per the analytical list enclosed in the study of Prayag and Ozanne (2018). They are briefly discussed in this section. The goal is twofold: firstly, to identify the previous findings; second, to position the current work within this academic literature. The previous reviews and conceptual papers are divided into three groups, based on the paper's object: i) sharing phenomenon; ii) business models, trends, and impacts; and iii) propositions, frameworks, and key topics.

Sharing phenomenon

Dredge and Gyimóthy (2015) focus their attention on the collaborative economy. The first part of this paper discusses the evolution of the topic, while the second analyzes the implications for the tourism industry. Five main determinants are identified as drivers favoring the growth of the collaborative economy. These antecedents include the presence of idling assets, high transaction costs and distorted information, asymmetries of regulation, the research of authenticity by postmodern tourists and the need to develop “asset-light” investments in the field of destination competition. Sigala (2017) explores one relevant driver of collaborative commerce in tourism: the advancement of technology. However, collaborative commerce has created a new phenomenon — the so-called consumer-to-consumer transactions (C2C) — leading to alternative tourism products that are different from traditional travel. The author identifies three implications that collaborative commerce generates for tourism demand, the tourism suppliers and, given the focus of the Sigala’s paper on technology, for providers of software. Sotiriadis and Van Zyl (2017) classified the main issues regarding the sharing economy in the H&T industry and identified five different topics: i) a useful summary of the business models of the sharing economy; ii) the impact on the hospitality industry; iii) the related issues and challenges; iv) the suitable strategies to surmount these challenges; and v) an agenda for future research. Roelofsen and Minca (2018) reflect on the changing notion of “community”, triggered by the growth of Airbnb, and the consequent modification of some travel keywords, such as travel, hospitality and home. Germann Molz (2018) explored the different scales of network hospitality, focusing her attention prevalently on Airbnb. The author proposed three different scales: i) spatial, ii) temporal, and iii) digital. The first level (spatial) is the most developed and includes the home, the neighborhood, the city, the country and, according to an Airbnb campaign, “anywhere.”

Business models and trends

The second topic presents some business models of home-sharing firms (mainly Airbnb) and identifies some trends. These three topics are well summarized by Guttentag (2015). This paper generally explores the business model of Airbnb, its regulation, and its impact. The article is rooted in the disruptive innovation theory. Similarly, the study by Bashir and Verma (2016) applies the disruptive theory combined with the business model framework of Airbnb. After exploring the value propositions, the assets and capabilities, the economic and the revenue logic, and the actors involved in the business network, they conclude that Airbnb can reshape the value mechanisms. Forgacs and Dimanche (2016) investigate the business model of Airbnb in order to define some possible revenue effects on traditional hotels. The authors described the Airbnb business model, identifying seven key distinctive features. These factors were able to generate a strong growth. For this reason, the authors conclude that the P2P APs have a profound impact on the tourism industry. However, some key elements of Airbnb’s business model can be implemented by hotels, such as a better website or the promise of authentic local experiences. Oskam and Boswijk (2016) analyze the business model of Airbnb with the aim of identifying some possible impacts on the hotel industry. Their document is based on scenario theory. The Airbnb business model is mainly centered on two innovative features: authenticity, and the economic benefits for both hosts and clients. For this reason, the authors suggest that this has an important impact on the hotel industry. Kannisto (2017) adopts the business model theory conceptualized around two questions: what do customers value, and how do firms generate revenue? In exploring the value and revenue mechanisms of various sharing firms, the author concludes that P2P APs are not business model innovators, as they have “only” combined a set of existing models.

Moving from business models to trends, Heo (2016) reports some evolutions characterizing research in the SE. Three main expanding areas of inquiry are proposed: impact studies, the regulation of the SE, and the local residents' attitudes toward tourism development. Bowen and Whalen (2017) identify four trends that are currently changing the travel industry: technology, big data, social media, and online communication, namely the SE. As specified by the authors, the key driver is technology, while the other three trends are triggered by subsequent technological advances. The key driver explaining the strong growth of the SE is the ability of people to share their possessions as a source of additional income.

Propositions, frameworks, and key topics

The third group develops some *propositions* and/or identifies some *key topics* and proposes *frameworks*. Based on co-citation analysis, Cheng (2016a) depicts five research clusters for the general SE literature (lifestyle and social movement, consumption practice, sharing paradigm, trust, and innovation). Focusing on the tourism and hospitality industry, two themes emerge: the impacts generated by the SE on destinations and tourism services on one side, and tourists on the other. A second study by Cheng (2016b) explores the conceptual map of the SE based on analysis of a large variety of national and international newspapers. A total of four topics are covered: Airbnb, the impacts on tourism's socioeconomic system, people's mobility and SE start-ups. Celata, Hendrickson, and Sanna (2017) investigated the relationships between trust, reciprocity, and belonging to the SE. Huber (2017) proposes a conceptual framework to analyze diverging dynamics of collaborative consumption practices, and the study centers on social practice theory. Dornier and Selmi (2018) formulate some assumptions related to the home-sharing users' sensitivity about sustainability in the context of mountainous areas. Generally speaking, the authors suggested that guests in mountainous areas are more sensitive about sustainability than those staying in urban areas. Finally, Prayag and Ozanne's (2018) study is the most structured systematic literature review about P2P APs. Based on a multi-level perspective, the authors identify some themes: the conceptual definition and key concepts, host behavior, guest/host experiences, marketing experience, impacts of P2P APs, regulation, industry response, and business models. More recently, Altinay and Taheri (2019) have identified some emerging overarching theories (complexity theory, social exchange theory, norm activation model, and value co-creation) and some topics (trust and reputation, disruptive behavior, choice and segmentation, pricing strategies, socially excluded consumers, personality and satisfaction). Dann, Teubner and Weinhardt (2019) have investigated the growing body of research focused on Airbnb. Based on 118 papers: "the authors find that: research on Airbnb is highly diverse in terms of domains, methods and scope; motives for using Airbnb are manifold (e.g. financial, social and environmental); trust and reputation are considered crucial by almost all scholars; the platform's variety is reflected in prices; and the majority of work is based on surveys and empirical data while experiments are scarce" (Dann, Teubner & Weinhardt, 2019, p. 427). Dolnicar (2019) has developed a knowledge map for paid (commercial) P2P APs. The proposed model is structured along two dimensions: the topic of investigation and the form of knowledge generated. Focusing on the first variable, four topics are proposed, based on the relationship between P2P APs and: i) H&T industry; ii) society; iii) public policy; iv) environment. The second variable proposes three different forms of knowledge: first order of knowledge represented by concepts in isolation (concepts); second order includes the non-causal model as structural frameworks and empirical generalizations (associations); the third form develops conclusions about cause-and-effect relationships (cause-and-effect). The author positions some relevant researches in this matrix and identifies research gaps. Finally, Sainaghi et al. (2019a), using a co-citation analysis, identified four groups: economic and social impact; foundation studies of SE; authenticity and disruptive innovation; and travelers' motivations and behaviors.

The current article is part of the third group of reviews and allows the identification of emerging topics and research design. In the conclusion, the findings are compared with those proposed by previous reviews, in order to identify overlaps and differences. The second research question (research design) was not commonly explored by previous papers (if not incidentally).

2.2 Cross-citation approach

The reviews previously analyzed concur that the number of papers focusing on P2P APs and more generally the sharing economy is exponentially increasing (Dolnicar, 2019). Therefore, to explore this wide body of knowledge, bibliometric methodologies are useful (Hall, 2011). Within this wide methodology, growing attention is being paid to the relational approach, which is centered on the links among papers represented by citations (Wardle & Buckley, 2014). The basic idea is very simple: authors cite other studies that are relevant to them (Sainaghi et al., 2018a). Therefore, citations are able to discover the patterns underlying different published articles (Benckendorff & Zehrer, 2013). These relationships are objective (Kim et al., 2009) and more reliable than subjective content analysis (Leung, Sun & Bai, 2017).

Within the relational approach, there are at least three different methodologies: co-citation, coupling citation, and cross-citation (Wang, Qiu & Yu, 2012). The first two approaches focus on the relationships among papers and references and therefore explore the intellectual structure of a precise discipline (García-Lillo et al., 2018). Said differently, using these methodologies, it is possible to identify the theoretical pillars of a precise research stream (Sainaghi et al., 2019b). In fact, two studies are co-cited if they share at least one reference. Therefore, this study represents a shared knowledge. Co-citation links documents that reference the same set of cited documents. Some graphical examples of the different methodologies are reported in some studies (i.e. Boyack & Klavans, 2010; Köseoglu et al., 2016a; Sainaghi et al., 2018a).

In contrast, cross-citation explores the links among papers and therefore identifies clusters or communities of researchers (Howey et al., 1999). Two papers are cross-tied if one study cites the other (Wang, Qiu & Yu, 2012). Therefore, there is an objective link between the title of an article (cross-cited work) and the reference of a cited study (cross-citing paper; Sainaghi et al., 2018a).

The application of the relational approach in H&T papers is limited (Köseoglu et al., 2016a), even though it has attracted more attention (Köseoglu et al., 2016b). Based on the research question stated in the introduction, this paper uses the cross-citation approach. This methodology, in fact, is able to identify communities and topics in a precise area of inquiry (Sainaghi et al., 2018a, 2018b). The relational approach shows the ties among papers; therefore, the network theory can be a useful tool to illustrate underlying relationships (Gomezelj, 2016). The network theory is a widely accepted methodology in the H&T industry (Baggio & Sainaghi, 2011; 2016; Sainaghi & Baggio, 2014, 2017).

3 METHODOLOGY

3.1 Paper selection

To define the sample of papers, the following parameters were considered: i) the journals to be included, ii) the databases, iii) the keywords related to the topic, iv) the keywords used to identify the industry, v) the number of years for which the studies were analyzed, vi) the type of publication, and vii) the language. Each of these variables is briefly illustrated and discussed below.

With regard to *journals*, some literature reviews only look at leading H&T journals (Chan & Hsu, 2016; Sainaghi, Phillips, & Corti, 2013), while other articles prefer to include a wide sample (Sainaghi, Phillips, & Zavarrone, 2017). Both approaches have advantages and disadvantages: using leading journals guarantees that the sample is more relevant, but at the cost of excluding an important

layer of studies. The opposite effect occurs when the sample is not focused on leading journals. The literature among P2P APs is not confined to leading journals. In fact, as suggested by Dolnicar: “the number of studies is overwhelming and an extraordinarily wide range of academic disciplines investigate Airbnb” (2019, p. 249) and more generally the sharing economy. Therefore, focusing the sample only on leading journals generates an arbitrary exclusion of some relevant papers. Furthermore, the utility of enlarging the sample is confirmed in other H&T fields (Sainaghi et al., 2018b). To guarantee a wide coverage of literature, the present study avoided focusing on only leading journals.

The second variable focused on the *databases* employed to select journals and papers. Usually, bibliometric studies are based on Scopus (Sánchez-Rebull, Rudchenko & Martín, 2017) and/or Web of Science (de la Hoz-Correa, Muñoz-Leiva, & Bakucz, 2018). The majority of previous reviews and conceptual articles focused on the sharing economy in the H&T industry have not defined their sources (Bowen & Whalen, 2017; Heo, 2016; Huber, 2017; Guttentag, 2015), but there are some exceptions. Cheng (2016a) used three databases, while Prayag and Ozanne (2018) used five. However, Prayag and Ozanne (2018) suggested that the wide-ranging coverage offered by Scopus and Web of Science dramatically reduces the number of new studies identified by additional databases. For this reason, the present paper employed Scopus and Web of Science.

The third variable was centered on the *keywords related to the topic* (P2P APs). This choice is necessarily based on the precise field of research (Altin et al., 2018). This paper used six keywords, four of which were related to P2P APs—sharing economy, collaborative economy, collaborative consumption, P2P (Cheng, 2016a, 2016b; Dredge & Gyimóthy, 2015; O'Regan & Choe, 2017; Prayag & Ozanne, 2018)—and two were related to the most relevant sharing firms, namely Airbnb and CouchSurfing (Bashir & Verma, 2016; Decrop et al., 2018; Pera, Viglia, & Furlan, 2016).

The fourth variable operationalized the *industry*. Given the overlap between P2P APs on the one side, and H&T on the other, this study used three keywords for the tourism sector – tourism, tourist, and traveler (Lambea Llop, 2017; Sovani & Jayawardena, 2017) – and three for the lodging industry: hospitality, hotel, and accommodation (Blal, Singal & Templin, 2018; Tussyadiah & Pesonen, 2018).

The *number of years analyzed* by literature reviews is usually wide, adopting a longitudinal approach. For example, in the field of performance measurement, reviews usually embrace a period of 20 years (Altin et al., 2018). The research team for the current paper did not apply any temporal restrictions, and the gross sample included papers from 1982 to 2018. However, after a thorough analysis of each article, many papers were excluded because, even though they contained the research keywords, their topics were not related to P2P APs. The final sample included studies covering the period 2010–2019, with 2019 only including papers published early in the year.

The *type of publication* focused on papers, including full articles, literature reviews, and research notes. In this emerging research stream, research notes play an important role. In fact, some journals (primarily *Annals of Tourism Research* and *Current Issues in Tourism*) heavily feature this type of study. Finally, the only *language* considered was English. The research strategy was based on two databases – six keywords for the topic and six for the industry – generating a total of 72 queries.

3.2 Sample selection

The 72 queries were run on November 12, 2018, generating an initial sample composed of 2,526 articles (see Table 1). Web of Science used a more intensive process, generating 55% (1,389) of the initial gross sample. In line with Prayag and Ozanne (2018), a two-stage inclusion/exclusion process was applied when selecting the final sample. During the first stage, all the duplicated papers were removed (1,932), obtaining a gross sample of 594 studies. The duplicated papers were identified based on title, DOI, and other data related to the article. The percentage of duplicated documents was

seemingly higher in the case of Web of Science (81%) than that of Scopus (71%). In reality, the initial database (2,526 papers) was alphabetically ordered based on the database name, and therefore, the papers extracted by Web of Science were listed after those extracted from Scopus. In stage two, every document was analyzed, and the abstract as well as the full paper (if necessary) was read to verify that the study was relevant to P2P APs. During this second stage, 405 documents were excluded. The percentage of outliers was the same for Scopus (184/1,137) and Web of Science (221/1,389), at 16%.

Table 1. The sample

Databases	Initial sample (#)	Initial sample (%)	Records duplicated (#)	Records duplicated (%)	Gross sample	Papers excluded after screening (#)	Papers excluded after screening (%)	Final net sample (#)	Final net sample (%)
Scopus	1,137	45%	802	71%	335	184	16%	151	80%
Web of Science	1,389	55%	1,130	81%	259	221	16%	38	20%
Total	2,526	100%	1,932	76%	594	405	16%	189	100%

3.3 Cross-citation and cluster network approach

Network cluster analysis was the chosen method for identifying the different topics discussed in relation to P2P APs. The method is known for its ability to extract groups of papers that can be taken as representative of certain topics (Baggio & Klobas, 2017).

The method is based on network science (Baggio & Sainaghi, 2011). In a bibliometric analysis, a network can be built where the nodes are the papers included in the sample, while citations are the links (Sainaghi et al., 2018b). Many previous relational bibliometric studies were based on this approach in the H&T industry (Benckendorff & Zehrer, 2013; Köseoglu et al., 2016a, 2016b).

To create the network, for each paper, the full list of references was assessed. A software procedure was run to search the 189 paper titles in all the references, and 542 cross-citations were retrieved. Next, a list of the references was assembled. Citations to the other papers in the sample were directed links of the network. The resulting matrix was, actually, a network adjacency matrix.

Based on these data, the network was assembled and the principal metrics were calculated, such as the nodal degrees (number of links each node has) and their statistical distributions, the density (number of links existing as a fraction of the maximum possible number of links), and the average path length (average distance between any two nodes) (da Fontoura Costa et al., 2007).

The extent to which a network has a modular structure is measured by the metric Q. This measures the strength of division of a network into different modules and is calculated as the fraction of the edges that fall within the given groups minus the expected fraction if the edges were distributed at random. The higher the Q value, the more defined and separated the modules that are found (actually, Q is normalized, so 0 = no modular structure, 1 = completely separated modules).

Several stochastic algorithms exist for computing the modularity of a network and detecting the different communities. They differentiate themselves in terms of the network characteristics they consider (directionality, weights, etc.) and the resolution power, that is, the capacity to detect the fine structure of the network under study (Fortunato, 2010). Herein, we used the so-called Louvain algorithm proposed by Blondel et al. (2008). This is a fast procedure that is able to return high-quality outcomes. It is a heuristic iterative algorithm made of two steps that are repeated iteratively. It starts by randomly assigning each node to a community. Then, each node is moved to a neighbor's community, and the algorithm calculates the variation in the modularity metric Q. The node is assigned to the community that produces the largest positive increase of Q. In the second step, each

community is replaced by a “super node,” and the resulting clustered network undergoes the same procedure. The two steps are repeated until no more variations in modularity are attained. By tuning a resolution parameter, the Louvain method allows the detection of communities at different scales. Here, we use a value of 1, which provides a good resolution power, allowing the discovery of reasonably sized and separated clusters. Community analysis is applied to the largest connected component of the network. These calculations found nine clusters later analyzed. Only cross-cited papers (150) were included in these clusters, while disconnected papers (39) were considered outliers. A connected paper is an article that is cross-cited (receives a cross-citation), cross-citing (gives a cross-citation), or both. A disconnected paper is an article that is neither cross-cited, neither cross-citing. Many previous papers have used these statistical algorithms to identify clusters in bibliographic studies (Acedo, 2006; González-Teruel et al., 2015; Shiau, Dwivedi, & Yang, 2017), with many applications also in the H&T fields (Benckendorff & Zehrer, 2013; Koseoglu & King, 2019; Okumus et al., 2018; Racherla & Hu, 2010; Sainaghi et al., 2018a, 2018b).

4 THE MAIN CLUSTERS OF TOPICS

Based on the paper’s research question, the findings section reports the identified clusters (later also defined as communities or groups) using network cluster analysis. Each cluster is then analyzed, and the following items are discussed: i) general cluster topic, ii) sample information, iii) used variables (only for quantitative papers, as later defined), iv) methodology, v) theoretical background, and vi) main findings.

The *general topic* characterizing the cluster represents the synthesis of the analytical inspection based on the following points (sample, variables, methodology, theoretical background, and findings). The theme was identified, mediating between the key characteristics of each paper. To help the reader obtain a clear idea of the cluster theme, the topic was posited as the first point in each cluster description. Furthermore, the name of the cluster was based on the general topic.

The *sample* was analyzed after considering the wide spectrum of variables reported in Appendix 1. Based on the type of study, qualitative and quantitative papers were identified. Quantitative articles were sub-divided into two groups. There were quantitative papers structured around independent and dependent variables (dependent quantitative studies). Other quantitative studies simply used some quantitative data (number of hosts, number of guests) that were analyzed using some statistical methodologies, including graphical representations. Finally, the qualitative studies were based on interviews and content analysis, and they included literature reviews and conceptual papers. Considering the evidence collected, the sample was divided into empirical papers (they employed some type of data) and non-empirical papers (typically conceptual or literature reviews). Regarding empirical studies, Appendix 1 shows if the collected information refers to demand (guest reviews, online client questionnaires), supply (hosts, hotels), or both (demand and supply), or to another type of stakeholder (residents). If reported in the paper, the sample size was recorded. The size was operationalized in a couple of indicators. The first was divided in three slices (less than 200, between 201 and 1,000, and more than 1,000) and counted the number of studies, while the second reported the mean. For all the articles, the type of P2P AP was collected, distinguishing between Airbnb, CouchSurfing, or others. The country (or countries) was analyzed. Given the high number of countries, some aggregations were proposed, mainly based on continents. Gursoy and Sandstrom’s (2016) classification was applied, distinguishing between “top” and “other” T&H journals.

In the case of quantitative papers, *used variables* were analyzed, considering the number of independent variables included in the study and the type of dependent variables. The *methodology* represents the analytical tools used to test the expected relationships between determinants and outcomes in the case of quantitative studies (such as regression) or to explore other qualitative sources of evidence in the case of qualitative studies (such as content analysis). As discussed in the

introduction, some authors consider this new area of inquiry as “atheoretical” and mainly dominated by grey literature and commissioned research reports. For this reason, when possible, the *theoretical background* was identified. The latter, in some cases, was explicitly indicated by the authors; in others, it was implicitly deduced from an analysis of the literature review section. Finally, the main *findings* were reported—necessarily in a synthetic order and concentrating on the more overlapping studies—discussing similar and contrasting evidence.

All the evidence, divided into the nine clusters, is reported in the four appendixes: Appendix 1 (sample), Appendix 2 (variables), Appendix 3 (methodology), and Appendix 4 (theoretical background). Finally, Appendix 5 shows all the cross-connected papers (150) included in each community, with the relative references. Following, some key methodological features are described, identifying the distinctive characteristics of each cluster without analytically presenting the research design variables.

4.1 Conceptual studies on the sharing economy (cluster 1)

The general topic of the first cluster was represented by *qualitative studies focused on the sharing phenomenon*. While the focus of the other communities was on a precise type of P2P AP (such as Airbnb), the use of a particular type of study (as quantitative), or a specific topic (demand, impacts), the peculiarity of the first cluster was centered on the general theme of the sharing economy.

In line with this focus, the *sample* was largely composed of qualitative studies (65%) and the highest percentage of nonempirical papers (32%), mixing both demand (48%), supply (24%) and demand and supply (24%) evidence. The *sample* size was small (45%), given the high number of qualitative studies, and showed the highest percentage of “other” types of P2P APs (39%). The latter usually integrated Airbnb and CouchSurfing with other sharing platforms. The papers were not related to a particular continent or a time slice and showed a slightly higher focus on top journals (55%). The *variables* depicted the prevalent use of a few independent variables (82%), while the dependent variables were wider, including the marketing approach (service quality, customer satisfaction, loyalty, intention to book) (36%) but also business performance (27%), consumer behavior (18%), and social and environmental performance (9%). However, only 11 out of 31 were dependent quantitative papers. The *methodologies*, given that the majority of the studies were qualitative, centered on content analysis (48%). Finally, *theoretical background* accounted for the highest percentage of sharing theory (sharing, experience, and moral, cultural, and collaborative economy; 32%).

The *findings* revealed some sub-topics: i) conceptual papers, ii) demand empirical papers, and iii) host-guest relationships. The first sub-topic (conceptual paper) accounted for the majority of articles and for this reason is discussed. The conceptual papers include some reviews previously presented (§2.1), as the work of Dredge and Gyimóthy (2015), Cheng (2016a, 2016b), Heo (2016), Kannisto (2017) or investigate the business model of P2P APs (Razli, Jamal & Zahari, 2017). The demand papers were mainly focused on CouchSurfing and other sharing firms than on Airbnb (compared to the other clusters). The focus on CouchSurfing was not surprising given the ability of this noncommercial platform to represent, to a wider extent, the sharing phenomenon. Some recurrent topics were related to the role of technology for guests, and clients’ motivations. The third sub-topic focused on host-guest relationships and was prevalently based on CouchSurfing. Additionally, in this case, the focus on CouchSurfing was motivated by the fact that the strongest ties linking hosts and guests on this platform, were usually clients living with hosts in the same house/apartment.

4.2 Consumer behavior (cluster 2)

The second cluster adopted a *consumer behavior* approach, mainly exploring some buying mechanisms (such as guest motivations, the determinants of intention to buy, the antecedents of memorable experiences) or comparing sharing and hotel guest behaviors. This last group of papers was very valuable for developing an empirical background about the substitution threat generated by P2P APs (as later discussed).

The *sample* showed some peculiarities: qualitative (42%) and dependent quantitative studies (46%) had a similar weight, and the vast majority of papers were empirical (71%, the highest percentage). The empirical data were collected focusing on Airbnb (63%), in line with the entire sample (67%), while the evidence was mixed and not focused on a particular continent. The percentages related to the journals and time slices were in line with the general mean. The dependent *variables* were obviously related to consumer behavior (36%, the highest percentage) and more generally to the marketing approach (27%), while business performance (0%) had the lowest value. The *methodologies* used had a wide coverage, all of them presenting values in line with the total. In terms of *theoretical background*, marketing and consumer behavior, as expected, play a pivotal role (46%), followed by some other social theories (21%).

Regarding *findings*, two sub-themes were identified: i) consumer behavior and ii) social and economic impacts. Consumer behavior was the heart of this cluster and was the topic of the majority of papers. Some “classical” consumer behavior topics were analyzed, such as guest motivations, determinants of intention to buy, and antecedents of memorable experiences. Some other studies compared sharing and hotel guest motivations, usually showing strong differences. This last topic explained the presence of the second sub-theme, which was focused on social and economic impacts. In fact, to understand the effects generated by the P2P APs on hotel firms (economic impacts) or on local destinations (social impacts), it is important to know the substitute threat generated by sharing firms. Giving the differences in term of motivations between sharing and hotel clients, the economic impacts are usually considered not very relevant.

4.3 Airbnb: Spatial patterns and substitution threats (cluster 3)

The third cluster was centered on *Airbnb* and *quantitatively* investigated some topics prevalently related to *spatial patterns* of Airbnb hosts and the *substitution threat* that the hosts generate on traditional hotels. These two themes appear disconnected, but in reality, they are strong interrelated. In fact, the analysis of spatial patterns confirmed the overlap between location choices of Airbnb listings and hotels. The higher the similarities in spatial patterns, the higher the potential substitution threat.

The *sample* illustrated a very small percentage of qualitative studies (25%, one the lowest values) and, by contrast, a higher weight of both dependent (38%) and other quantitative studies (38%). Unsurprisingly, 94% of papers were empirical, and the type of evidence was centered on supply (47%) and demand and supply (33%, the highest percentage) data, while demand evidence (20%) was considerably lower than the average (39%). Supply studies supported the analysis of location patterns, while demand and supply data were useful to understand the similarity between hotel and P2P AP guests. The sample was quite big (more than one thousand) (50%) or medium (201–1000) (36%). This cluster was strongly centered on Airbnb (81%). The sample size (medium and big) and type of P2P AP analyzed (Airbnb) were correlated. In fact, the wide diffusion of Airbnb supported the use of relatively big samples. The countries investigated were prevalently related to North America (38%) and Asia, and Australia (25%). By contrast, the percentage related to Europe (13%) was considerably less than the average (28%). This was probably linked to the use of quantitative methodologies (as later reported). As shown by some previous literature reviews, American and Asiatic researchers employ more quantitative studies than European researchers (Sainaghi, 2010).

The *findings* can be articulated in two sub-topics: i) spatial patterns of Airbnb listings and ii) substitution threat studies. The first group mainly included papers exploring the location patterns of Airbnb listings based on GIS technology or papers exploring the motivations for renting a place on Airbnb. The papers, despite using different methodologies or exploring different places, suggest convergent results: Airbnb listings are predominantly clustered in areas that are close to city centers and tourist attractions and that are home to a young, creative, and talented crowd. However, the location determinants show some differences dependent on destination (Quattrone et al., 2018). The concentration in city centers and near tourist attractions appears reasonable, considering that Airbnb mainly attracts existing houses and apartments and therefore only the “attractive” options can be profitably sold through this channel. Moving to the second sub-topic, the findings suggest a small substitution threat, usually more intensive for lower-end hotels.

4.4 Airbnb: Determinants of performance (cluster 4)

The fourth cluster focused on business and demand *performance*, measured using *quantitative* studies and exploring prevalently Airbnb. This orientation was synthesized using the concept of “determinants (or antecedents) of performance.”

The *sample* shows the highest percentage of dependent quantitative studies (94%), a value more than double compared to the general mean (43%). Coherently, all the papers (100%) were empirical and centered more on supply evidence (50%), followed by demand studies (38%). As reported in the cluster name, Airbnb was the most investigated P2P AP (88%). In terms of journals, this cluster clearly focused on top journals (75%, average mean 49%) and was an emergent field of inquiry. In fact, 2018–2019 papers collected 69% (average mean 43%). Given the focus on supply results, the *dependent variables* were related to business performance (50%). The *methodologies* were widely centered on regression (69%). The *theoretical background* was twofold. On the one hand, business performance accounted for 50% (general mean 13%), and on the other hand, marketing and consumer behavior attracted the other remaining 50% (general mean 25%). While the first theoretical background (business performance) was congruent to the cluster topic (determinants of performance), the second one (marketing approach) appeared less coherent. As later clarified by the findings, in reality, demand studies operationalized the variables (independent and dependent) using a demand approach.

The *findings* were centered on hosts and demand performance. The first group collected studies researching some determinants of listing performance. As usual, the antecedents of performance were wide and included some general characteristics of listings (size, location), destination amenities (tourist attractions), hosts characteristics (such as a “super host,” a professional host, an experienced host), guest reviews (number and ratings), and some variables related to the environment (level of demand, unemployment rate). A counterintuitive finding is related to the number of reviews (review volume) and the price. While in the hotel sector the relationship is usually positive, in the field of Airbnb it is the opposite. This evidence is prevalently explained by the consideration that cheap listings attract a higher number of clients, with a positive effect on review volume. Instant booking has a negative impact on performance, while the number of host photos generates a positive effect. The dependent variable was mainly centered on price. The demand papers presented the same structure but the dependent variable was reasonably operationalized using demand results, such as customer satisfaction, guest loyalty, review ratings, or trust. There is an important methodological difference between supply and demand studies. Data are recorded in the supply approach using listings information, while demand papers are largely based on ad hoc questionnaires. Therefore, the variables showed less overlap between diverse studies because the questionnaire could be differently structured.

4.5 Host-guest relationships (cluster 5)

The sharing economy generated P2P relationships between *host and guest*, supporting the sharing discourse about authenticity and social interaction. It was not surprising that there was a cluster focused on this topic.

Given the nature of this relationship, the *sample* was strongly centered around qualitative studies, showing a percentage (71%, the highest) considerably huger than the average (43%), given the centrality (as later clarified) of guest reviews analyzed using content analysis and in-depth interviews. As usual, the papers were empirical (79%). A key characteristic of this cluster was to mix demand (27%), supply (27%), and demand and supply (27%) type of evidence, in accordance with the cluster topic. While clusters three and four, based on quantitative studies, included prevalently North American and Australian and Asiatic evidence, the cluster five was largely centered on European countries (57%), a value double than the average (28%). The papers were addressed to other journals (71%). The host-guest papers were prevalently old studies. In fact, 57% (23% the average) of them were published between 2010 and 2016. The *methodologies* were in line with the topic of this cluster and were represented by content analysis (50%) and interviews (21%), plus other statistical methodologies (21%). The *theoretical background* was wide and included “gentrification” (29%), marketing and consumer behavior (21%), and “other” (21%). “Gentrification” was defined by Gant (2016) as a process of capital investment in the built environment (tourist apartments) that caters to the demands of affluent users (such as guests and rentals) and over time displaces the indigenous population (residents).

The *findings* were articulated in two sub-topics: i) investigating host-guest relationships and ii) reflecting on authenticity and sustainability. The first group centered on CouchSurfing and employed intrusive methodologies (as participant observations and in-depth interviews) to explore the host-guest relationship. The themes analyzed included the ability to change the concept of “home,” friendships with foreign guests, and generation of trust. Airbnb has changed the meaning of home, represented as a site of belonging, with a more authentic option more involved in the local context. The second group was wider and apparently lesser internally coherent than the first. Some studies described the business model of some P2P APs and suggest the centrality of authenticity, generated by host-guest interaction. Other studies investigated the effects generated on the local destination (housing market and residents) by employing the gentrification paradigm. This second group of papers is intimately related to the first one. In fact, the host-guest relationship is mainly centered around authenticity, friendship, localness and trust or, said differently, on social sustainability. The opposite of this approach is unsustainable practices able to generate negative economic and social impacts. An example of this unsustainability is the “social displacement process” as described by Gant: “First, the growth of tourism causes a progressive out-migration of residents via direct displacement. Second, it is at the origin of housing shortage and price increase, which excludes other residents from the possibility of moving into the area. Third, this exclusion is accelerated by the daily disruptions and economic pressures caused by vacation flats. Finally, such disruptions and the pressure of tourist investors “force” residents to sell their flats. In such a context, the only buyers tend to be tourist investors, which further intensifies and reproduces the displacement process” (Gant, 2016, p. 7).

4.6 Social impact and regulation (cluster 6)

Cluster six was composed of papers focused on the impacts generated by P2P APs on local destinations and, consequently, the need of regulation.

Exploring the *sample*, this community is mainly populated by empirical papers (85%). The majority of articles were quantitative (69%), in line with the cluster topic (social impacts). This cluster used mostly supply data (64%). Airbnb was the largest P2P AP analyzed (77%). This is coherent with

the topic, given the wider impact generated by this profit-sharing website. By contrast, no one article employs evidence related to CouchSurfing. In terms of journals, this community centered on other journals (77%, the highest value). The studies showed a strong focus on Europe (46%) and North America (46%). In particular, European papers investigated mostly Spanish cases and, in particular, the city of Barcelona. Only 5 papers out of 13 employed independent and dependent *variables*. The *methodologies* were mixed, including content analysis (31%), regression (31%), and other statistical tools (38%). In particular, content analysis refers to the use of guest reviews (demand studies), while regression and other statistical tools are used in studies based on supply data. The *theoretical background* was wide but centered on gentrification (31%), a value considerably higher than the mean (13%).

The *findings* were clustered around two topics: i) social impacts and ii) regulation. The first group accounted for the majority of papers and represented the distinctive theme of this cluster. The studies, despite some differences in term of goals, methodologies, and evidence, show a partial convergence of the social effects generated by P2P APs (and in particular by Airbnb) on the housing market and more generally on residents. The effects were mainly described as negative because short-term rentals can generate a displacement of long-term houses, therefore increasing the rent for residents. This effect can generate some forms of gentrification in the medium- and long-term. It is the Airbnb density in a precise census tract that triggers a rise in long-term rent. The threshold ranges from 5% to 7% in different studies. The most vulnerable population groups are tenants of apartments in city centers, and citizens with a low or medium income, who note rises in prices and a change in the housing market. Other social impacts are related to the effects on seasonality. The degree of concentration of tourists (seasonality) is higher in apartments rented online than in other types of accommodation. The second topic, consequently, reflected on regulations, suggesting the need to distinguish between commercial and noncommercial listings, to move beyond the “yes, no” approach, and to integrate technology to regulate P2P APs. Interestingly, the study of DiNatale, Lewis and Parker (2018) analyzed 237 Oregon cities revealing that 68% of Airbnb listings generate less than 10 thousand dollars per year and 32% less than 600\$. By contrast, professional hosts (also called multi-listings hosts) represent a large percentage of the Airbnb capacity in some cities. For this reason, the regulation should segment the different listings and hosts, distinguishing “mom-and-pop” from commercial operators. The regulation papers suggest the need to combine ground and online procedures.

4.7 Economic impact (cluster 7)

While the focus of cluster six was on the social effects generated by P2P APs, cluster seven investigated *economic effects* and therefore reflected on the relationships between the development of short-term rentals and the impact on the hotel industry. This is a relevant topic, and the conclusions are fragmented at the moment, ranging from strong to limited economic impact.

The *sample* depicted the lowest percentage (23%) of qualitative studies; by contrast, dependent (54%) and other (23%) quantitative studies collectively had the highest value (77% compared to a general mean of 57%). This is in accordance with the cluster topics: the measurement of economic effects requires quantitative studies. Empirical papers represented the majority (85%), and the collected evidence centered on supply data (82%, the highest value). The sample size was anchored to a large set of data (more than one thousand, 50%) and focused on Airbnb (92%). Empirical data were collected prevalently in Europe (54%). Seven papers (out of 13) had independent and dependent *variables*. The dependents were mixed but showed some higher values on social and environmental performance (43%) and business performance (29%). Both were coherent with the general topic of this cluster. Quantitative *methodologies* played a central role (77%) – including other statistical tools (46%), regression (23%), and structural equation modeling (8%). The *theoretical background*

revealed the relevance of the gentrification paradigm (38%), performance (15%), and social exchange (15%).

The *findings* were twofold: i) economic impact studies and ii) location patterns. Economic impact studies were centered on the effects of Airbnb on traditional hotels. Usually, dependent quantitative papers were focused on performance operationalized using rates. The studies usually compared some strategic choices characterizing hosts (or listings) and hotels, revealing prevalently importance differences, as in the case of location patterns. Despite the limited number of papers, studies suggested a limited competition generated by Airbnb at the presence but a potential strong threat for the future. In this sense, some papers were based on the disruptive theory, according to which a disruptive product underperforms during its initial stage and typically attracts low-end customers. For this reason, it is unappealing for leading companies. However, over time, the disruptive service improves, and it is chosen by a larger segment of users, thereby disrupting leading firms (Guttentag, 2015). The rise of Airbnb rates has a positive economic impact on hotels (RevPAR), but the increase in the Airbnb clients' satisfaction has a negative effect. The economic impact is not homogeneous for all hotels. This suggests that for some segments (usually cheap hotels) Airbnb generates a negative effect. Furthermore, the concentration of listings is relevant to the social effects (cluster 6) and economic impact. In some city zones (such as the center) the Airbnb listings are more concentrated and therefore generate a substitution threat. Therefore, we can conclude that the economic impact is limited. The second sub-topic was strongly related to the cluster seven object and analyzed the competitive overlap between Airbnb and hotels. These studies focused on spatial patterns (as cluster 3) but compared hosts and hotels. The empirical findings suggest a more central location for Airbnb listings and, more generally, greater closeness to tourist attractions. The location patterns are obviously influenced by the presence of housing units. In cities with many attractions and widespread points of interest (Paris, for example), the Airbnb listings are distributed throughout.

4.8 Airbnb and hotel strategies: Qualitative comparisons (cluster 8)

Cluster eight was less homogeneous than previous ones. The studies were prevalently based on qualitative evidence and methodologies, while the topics, with some differences among diverse articles, found some convergence in the comparison between Airbnb and hotels. However, the theme was not economic impact (as in the previous cluster) but some differences in the business model (supply side), the guests attracted (demand approach), or the host-guest relationship (demand and supply study). Therefore, the object was the *strategy*. The key characteristic of cluster eight was the *comparison* between Airbnb and hotels using *qualitative* studies.

The *sample* centered on qualitative studies (67%) and all the evidence came from Airbnb (100%). Additionally, the countries were mixed, but Europe (8%) collect a value considerably lower than the average (28%). This cluster was strongly linked to top journals (75%) and was the youngest. In fact, 75% of articles were published in 2018–2019. Qualitative *methodologies* accounted for 67%, namely consisting of content analysis (50%) and interviews (17%). Other statistical methodologies (25%) were prevalently based on simple descriptive statistics, as frequencies. Finally, the *theoretical background* showed the highest percentage in the “other” category, indicating some niche approaches integrated with sharing theory (25%).

The empirical *findings* were mainly structured around two sub-topics: i) comparisons between Airbnb listings and hotels and ii) host strategies. While the comparison between listings and hotels carried out in the third cluster was mostly centered around location patterns, cluster eight reflected qualitative differences more. The comparisons showed evidence of different segments with different motivations. In the case of Airbnb, the hosts played a central role, while in the case of the hotels, the key factor was the room. Other studies applied innovative theoretical backgrounds as the transaction cost or the co-creation paradigm. The number of studies suggesting the differences between the two

forms (listings and hotels) was prevalent, but other articles identified some possible similarities in strategic positioning. For example, Cheng and Jin (2019) investigated more than 170,000 guest reviews, revealing that some patterns behind Airbnb clients were similar to those of hotel guests. The rapidity of scaling, derived from non-owning sharable assets, is considered one of the biggest advantages that commercial P2P Aps and particularly Airbnb has in the competition with hotels. Overhead costs and fixed expenses are reduced, generating so-called “zero marginal cost economics” (Akbar & Tracogna, 2018). Furthermore, the increasing attention from travelers to authenticity is cited as a second relevant competitive advantage as there is an absence of regulation. The second sub-topic explored the host strategy without developing a comparison with hotels. It was not surprising that some articles were dedicated to the role of super host. This badge, in fact, is usually associated with higher operating performance. Airbnb has not clarified the criteria used to select super hosts, but some empirical studies suggest both the relevance of positive guest reviews and professional hosts.

4.9 Host-guest relationships in non-Airbnb P2P APs (cluster 9)

The last cluster counted only 11 papers, 8 of which were not based on Airbnb evidence. CouchSurfing accounted for the highest percentage. The general topic was again the *relationship between host and guest*, as in cluster five. However, while the latter was mainly centered on Airbnb (64%), the present group of papers was clearly focused on *noncommercial* platforms.

The *sample* included qualitative papers (55%) and dependent quantitative studies (45%). The articles, as usual, was largely empirical (91%) and was able to mix demand (40%), supply (40%), and demand and supply (20%) evidence. The sample size was prevalently small (40%) and medium (40%), while the big group attracted the lowest value (20%). As already suggested, Airbnb collects the lowest percentage (27%, general mean 67%). The evidence was not clearly related to a particular geographical area. These papers were published prevalently in other journals (64%) and were older. Only five papers were built around dependent and independent *variables*. The methodologies were mixed but centered around content analysis (45%). Similarly, the *theoretical background* included different disciplines. This was in line with the topic: the host-guest relationship in noncommercial P2P APs can be approached from the lens of different theories.

The *findings* focused their attention on non-Airbnb platforms (eight papers). Considering the small number of articles, the analysis was not articulated in the sub-topics. The papers identified some recurrent activities in the host-guest relationships by distinguishing between online performance (before the trip) and offline interactions (during the stay). Some articles explored privacy rules defined by hosts during their stay to regulate their interactions with guests. Others investigate the host-guest interaction’s generation of more value for the client, the suggestion of feeling at home, conversations, and participation in entertainment activities. Generally, the host-guest interaction was able to generate trust, influence the activities conducted by guests during their stay, and increased the sense of belonging to a community and authenticity.

5 CONCLUSIONS

The conclusions are threefold: they describe the conceptual maps depicted by the nine clusters and propose a macro research gap (§5.1), identify micro research avenues for each cluster (§5.2), and illustrate the study’s limitations (§5.3).

5.1 Conceptual map and macro research avenues

The first level of conclusions put together the pieces of the mosaic (the nine clusters) with the aim of identifying the whole picture, as reported in Figure 1.

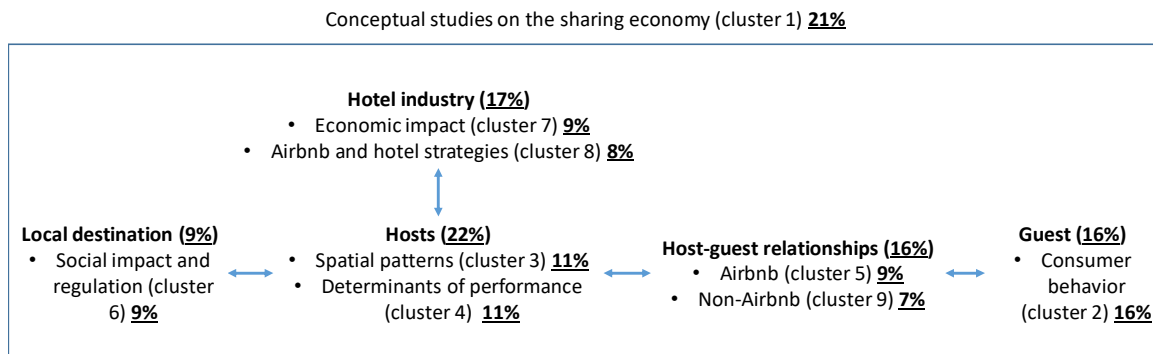


Figure 1. The macro-conceptual map

The figure reports the nine clusters ordered considering that P2P APs are intermediaries that create a relationship between hosts and guests, on the one hand, represent a new form of hospitality service generating social impact and competitive interaction with hotels. The nine clusters generated six areas of inquiry, five of which are in the rectangle and one is at the top, suggesting that conceptual studies on the sharing economy (cluster 1) are able to influence all the five blocks. For each cluster was reported a percentage based on the number of papers. The figure suggests that current research is exploring some emergent topics. Furthermore, the actual effort was considerably more focused on the “right side,” including guest studies (16%), host papers (22%) and the host-guest relationship (16%). More than 50% of the current research is exploring these three blocks. By contrast, the impacts generated by P2P APs has attracted considerably fewer studies, both considering the social implications (9%) and the effects on hotels (17%). The overall phenomenon (the sharing economy) is a single block with the highest value (21%).

It is interesting now comparing these results to previous reviews and conceptual papers, focusing particularly on studies based on “propositions, frameworks, and key topics” and using the segmentation introduced in Section 2.1. The nine identified clusters and macro-conceptual map (Figure 1) are considerably more developed than the review agenda proposed by Cheng (2016a). In fact, in this study only two clusters of topics were identified: the impacts generated by the SE on i) destinations and tourism services and ii) tourists. However, these two topics are included in the proposed model (Figure 1), especially in “local destination,” “hotel industry,” and “guest.” Similarly, the conceptual map proposed by Cheng (2016b), based on an analysis of a wide variety of national and international newspapers and structured around four topics (Airbnb, the impacts on tourism’s socioeconomic system, people’s mobility, and SE start-ups), underestimates the richness of the findings proposed in the present conceptual map. The four topics, however, are present in the nine clusters, particularly in “Airbnb” (cluster 5), “economic impact” (cluster 7), “social impact” (cluster 6), and “consumer behavior” (cluster 2) with the label “hosts” (Figure 1). The block “host-guest relationship” (Figure 1) includes topics such as the relationships between trust, reciprocity and belonging to the SE (Celata, Hendrickson, & Sanna, 2017), while the block “guest” develops various topics, including the sensibility and sustainability of sharing guest (Dornier & Selmi, 2018). The conceptual map shows some overlap with the study by Altinay and Taheri (2019) in the following areas: trust and reputation is mainly related to “host-guest relationships”; disruptive behavior with the “hotel industry”; choice and segmentation with the “guest”; pricing strategy regarding determinants of performance (cluster 4); socially excluded consumers with “guest” and in particular with the topic of digital discrimination; and personality and satisfaction with “guest” (customer satisfaction). The proposed conceptual map confirms the relevancy of some research topics proposed by Dann, Teubner and Weinhardt (2019), specifically the conclusion that the research on Airbnb is

highly diverse in terms of domains, methods, and scope. The model includes the four topics proposed by Dolnicar (2019), the H&T industry, society, public policy, and environment. In fact, the H&T industry relates to the “hotel industry,” societies with “local destination,” public policies with regulation (cluster 9) included in “local destination,” and environments with “local destination” as well as “spatial patterns” (cluster 3). The four topics proposed by Sainaghi et al. (2019a), using a co-citation analysis, are included in the model proposed in Figure 1: economic and social impact (cluster 6 and 7); foundation studies of SE (cluster 1); authenticity and disruptive innovation (cluster 2 and 8); and travelers’ motivations and behaviors (cluster 2). Finally, the research map proposed in this paper shows a good fit with the topics identified by Prayag and Ozanne’s (2018) study. Based on a multi-level perspective, the authors identify the following themes: the conceptual definition and key concepts as “conceptual studies on the SE” (cluster 1); host behavior as “hosts”; guest and host experiences as “host-guest relationships”; marketing experience as “determinants of performance”; impacts of P2P APs as “economic impact” (cluster 7); regulation as “social impact and regulation” (cluster 6); industry response as “Airbnb and hotel strategies” (cluster 8); and business models similar to the studies included in “hosts.” Generally speaking, the proposed model has the ability to be more widely articulated compared to those proposed in previous reviews and to create a system that can show the current research map in this field.

Figure 1 suggests some macro research avenues for P2P APs, that are reported in Table 2. Moving from the right side (demand), given the relevance assumed by the sharing economy, the guest segmentation can generate a future cluster. At present demand papers are mainly centered on consumer behavior, fewer articles have investigated the differences among diverse groups of sharing guests. Moving to host-guest relationships, currently the research is mainly articulated in studies based on non-commercial (CouchSurfing) and profit-oriented (Airbnb) P2P APs. Future efforts can integrate these analyses in order to identify similarities and differences. Surprisingly, the business model of the different P2P APs has not been investigated much and can represent a new cluster, positioned between hosts and guests. The host block accounts for the highest percentage (22%). The current research is mostly focused on spatial patterns and determinants of performance. Future studies can explore host motivations. Moving to the left side, the social impact generated by the sharing economy has been less investigated. This block plays a key role in the future. Similarly, economic impact studies (9%) require new research that can verify the competitive relationships between hosts and hotels in different contexts. These macro research avenues show some overlap with previous reviews. For example, the need to investigate the business model of P2P APs in depth is suggested by other studies (Altinay & Taheri, 2019; Dolnicar, 2019), as well as the need to further understand the impact of SE at local destinations (Dolnicar, 2019) and to explore the details of host-guest relationships (Dann, Teubner & Weinhardt, 2019). By contrast, there are other research avenues previously proposed that are not reported at this macro-level. For example, Cheng (2016b) suggests “people mobility” and “start-up”; Cheng (2016a) also proposes three different levels of analysis (micro-, meso-, and macro-level and the integration of these three levels); Dann, Teubner and Weinhardt (2019) suggest some methodological improvements, particularly the need to compare different destinations. However, despite some singular similarities (or dissimilarities), the macro research map reported in Table 2 appears to be original and updated.

Table 2. Macro research avenues for P2P APs.

Clusters	Research avenues
Conceptual studies on the SE	Investigate the social phenomenon of sharing and comparing the H&T with the broad academic literature.
Guest	Develop some segmentations of sharing guests.
Host-guest relationships	Identify similarities and differences comparing commercial and non-commercial P2P APs.
Hosts	Investigate business models of different sharing firms and analyze host motivation.
Hotel industry	Develop new studies able to measure the economic impact on the hotel industry in different contexts.
Local destination	Develop new studies able to measure the social impact generated by the SE.

5.2 Clusters and micro research avenues

This section states some conclusions based on the cluster analysis and identifies a future research agenda. While in the previous Section (§5.1) the focus was on macro research trends, the present section develops more focused (micro) gaps (Table 3). There is a general premise about the utility for all the nine clusters to combine the different type of research design (sample, variables, methodologies, and theoretical background). Some examples clarify this premise. Focusing on samples, the ability to mix qualitative and quantitative approaches, combining demand and supply data, using small, medium, and big samples, exploring different P2P APs, or collecting evidence from different countries can surely enlarge our knowledge of each cluster.

Table 3. Micro research avenues for P2P APs.

Clusters	Papers
Methodology (for all clusters)	Combine the different types of research design (sample, variables, methodologies, and theoretical background).
Conceptual studies on the sharing economy (cluster 1)	Develop new literature reviews able to identify emerging topics, trends, and research gaps.
Consumer behavior (cluster 2)	Integrate new studies built around wider samples and increase the overlap of the chosen independent and dependent variables of different quantitative studies to ensure generalization.
Airbnb: Spatial patterns and substitution threats (cluster 3)	Add some European cases (the cluster is centered around North American cases) and integrate with cluster 4 (determinants of performance).
Airbnb: Determinants of performance (cluster 4)	More focus on non-commercial P2P APs, integrate European cases, and integration with cluster 3 (spatial patterns).
Host-guest relationships (cluster 5)	Add quantitative studies (as host-guest reviews), enlarge samples, and integrate the European data with other continents.
Social impact and regulation (cluster 6)	Integrate the current studies based on less sustainable destinations (Europe and North America) into other research areas (like developing countries); includes more discussion in top H&T journals.
Economic impact (cluster 7)	Enlarge this group of papers, and more discussion in top H&T journals.
Airbnb and hotel strategies: Qualitative comparisons (cluster 8)	Enlarge this group of papers, more effort on quantitative studies, and integrate European cases.

Host-guest relationships in non-Airbnb P2P APs (cluster 9)	Enlarge this group of papers, and more integration between clusters 5 and 9.
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Focusing on cluster 1, future research should integrate new literature reviews into sharing studies. As reported in the sample used in the present study, the number of papers published on P2P APs is already high and increasing year by year. Therefore, conceptual studies are called for to illustrate the emerging topics, the trends, and the research gaps useful to orient researchers. Given the actual number of studies, future literature reviews can apply more extensively bibliometric approaches. The consumer behavior approach (cluster 2) should integrate new studies built around wider samples and rise the overlap of the chosen independent and dependent variables of different quantitative studies to increase generalizability. Cluster three (spatial patterns and substitution threat) includes mainly North American studies, so future research should add some European cases. Furthermore, an integration with cluster four (determinants of host performance) can be promising. In fact, the location patterns are surely an important control variable. Further, the fourth cluster (host performance) centers of North American and Asiatic and Australian cases, and by contrast, papers based on European cases are considerably lower than the average. This can open a future research avenue. The future research agenda can enlarge this group. Finally, determinants studies are centered on Airbnb hosts; future studies can expand the evidence and include other P2P APs. Moving to the host-guest relationship, cluster five is prevalently based on Airbnb evidence. It includes qualitative studies, based on small and medium sample size and employing European cases. Future research should enlarge this research design, adding quantitative studies (for example, host-guest reviews), big samples, and integrate the European data with other continents. Cluster six (social impact and regulation) plays a pivotal role for the sustainability of short-term rentals. The future research agenda should integrate the current studies based on less sustainable destinations (European and North-American) into other research areas (as developing countries). Furthermore, this community can be divided in three groups: i) studies based on mature destinations, ii) papers exploring emerging tourist contexts, and iii) articles integrating less sustainable and more sustainable destinations. Additionally, social impact papers are prevalently oriented to other journals. More effort is required to expand the discussion in the top H&T journals. Cluster seven and eight focus on the relationship between P2P APs and hotels. In particular, cluster seven focuses on economic impact. This strategic topic accounts only thirteen studies, so a future research agenda should enlarge this group of papers. The actual evidence is largely collected in Europe; therefore, a wider geographical scope is requested. Furthermore, economic impact studies are prevalently published in other journals. The relevance of this theme requires more attention from top H&T journals. The papers included in the eighth cluster compare the strategies used by hosts and hotels. The cluster collects twelve studies, and therefore more effort is required for the future to reinforce these evidence. The actual papers are mostly based on qualitative studies, but future research agendas should integrate quantitative papers. The geographical scope should be expanded, and new European cases should be included. Finally, the last cluster focuses on host-guest relationships analyzed using CouchSurfing and other noncommercial P2P APs. The main limitation is the number of studies (11), so future research efforts are required. Greater integration between the research results developed by cluster five and nine is surely important, given the focus of both on the host-guest relationship.

Comparing the proposed micro-research avenues to previous reviews, only the study of Prayag and Ozanne (2018) has developed a similar analytic approach. However, this review analyzes the published studies in detail (as previously done in this paper in Section 4) but does not develop a detailed future research agenda.

5.3 Limitations and further research

The clusters, as said, were identified using a statistical procedure. Despite this methodology being widely used in the literature (as discussed earlier), its stochastic nature may lead to some classification issues. This is a particular problem for those elements that border different clusters and are influenced by patterns of cross-citation. This overlapping of communities (Fortunato, 2010), however, does not significantly affect our analysis.

A second limitation refers to inclusion in the sample of only papers indexed in large databases (as Scopus and Web of Science). Despite these databases including thousands of relevant journals, this choice can exclude other relevant articles. Finally, paper identification is based on keywords. This can exclude some research papers. However, as discussed in the methodology, the study is based on 72 queries.

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Appendix 1. Clusters and sample structure

Sample		CI_1		CI_2		CI_3		CI_4		CI_5		CI_6		CI_7		CI_8		CI_9		Tot.	
Type of study		#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Qualitative studies		20	65%	10	42%	4	25%	0	0%	10	71%	4	31%	3	23%	8	67%	6	55%	65	43%
Dependent quantitative studies		11	35%	11	46%	6	38%	15	94%	2	14%	5	38%	7	54%	2	17%	5	45%	64	43%
Other quantitative studies		0	0%	3	13%	6	38%	1	6%	2	14%	4	31%	3	23%	2	17%	0	0%	21	14%
Total		31	100%	24	100%	16	100%	16	100%	14	100%	13	100%	13	100%	12	100%	11	100%	150	100%
Empirical vs. non-empirical studies																					
Empirical studies		21	68%	17	71%	15	94%	16	100%	11	79%	11	85%	11	85%	10	83%	10	91%	122	81%
Nonempirical studies		10	32%	7	29%	1	6%	0	0%	3	21%	2	15%	2	15%	2	17%	1	9%	28	19%
Total		31	100%	24	100%	16	100%	16	100%	14	100%	13	100%	13	100%	12	100%	11	100%	150	100%
Type of evidence (empirical studies)																					
Demand		10	48%	12	71%	3	20%	6	38%	3	27%	3	27%	2	18%	4	40%	4	40%	47	39%
Supply		5	24%	2	12%	7	47%	8	50%	3	27%	7	64%	9	82%	3	30%	4	40%	48	39%
Demand & supply		5	24%	2	12%	5	33%	2	13%	3	27%	0	0%	0	0%	3	30%	2	20%	22	18%
Other		1	5%	1	6%	0	0%	0	0%	2	18%	1	9%	0	0%	0	0%	0	0%	5	4%
Total		21	100%	17	100%	15	100%	16	100%	11	100%	11	100%	11	100%	10	100%	10	100%	122	100%
Sample size																					
0-200		10	45%	5	31%	2	14%	1	6%	6	67%	2	20%	3	38%	1	11%	4	40%	34	30%
201-1000		7	32%	7	44%	5	36%	7	44%	1	11%	3	30%	1	13%	4	44%	4	40%	39	34%
>1000		5	23%	4	25%	7	50%	8	50%	2	22%	5	50%	4	50%	4	44%	2	20%	41	36%
Total		22	100%	16	100%	14	100%	16	100%	9	100%	10	100%	8	100%	9	100%	10	100%	114	100%

Sample size																					
Mean		11.917	555	155.737	41.931	641	6.544	14.254	2.027.466	907	189.156										
Type of P2P AP																					
Airbnb		13	42%	15	63%	13	81%	14	88%	9	64%	10	77%	12	92%	12	100%	3	27%	101	67%
CouchSurfing		6	19%	1	4%	0	0%	0	0%	3	21%	0	0%	0	0%	0	0%	4	36%	14	9%
Other		12	39%	8	33%	3	19%	2	13%	2	14%	3	23%	1	8%	0	0%	4	36%	35	23%
Total		31	100%	24	100%	16	100%	16	100%	14	100%	13	100%	13	100%	12	100%	11	100%	150	100%
Countries																					
Europe		7	23%	7	29%	2	13%	3	19%	8	57%	6	46%	7	54%	1	8%	1	9%	42	28%
North America		6	19%	4	17%	6	38%	8	50%	0	0%	6	46%	3	23%	4	33%	4	36%	41	27%
Asia and Australia		3	10%	2	8%	4	25%	4	25%	1	7%	1	8%	1	8%	1	8%	0	0%	17	11%
Mixed		4	13%	2	8%	3	19%	1	6%	1	7%	0	0%	0	0%	2	17%	2	18%	15	10%
Not specified		10	32%	8	33%	1	6%	0	0%	3	21%	0	0%	2	15%	3	25%	4	36%	31	21%
Other		1	3%	1	4%	0	0%	0	0%	1	7%	0	0%	0	0%	1	8%	0	0%	4	3%
Total		31	100%	24	100%	16	100%	16	100%	14	100%	13	100%	13	100%	12	100%	11	100%	150	100%
Journal																					
Top		17	55%	11	46%	9	56%	12	75%	4	29%	3	23%	5	38%	9	75%	4	36%	74	49%
Other		14	45%	13	54%	7	44%	4	25%	10	71%	10	77%	8	62%	3	25%	7	64%	76	51%
Total		31	100%	24	100%	16	100%	16	100%	14	100%	13	100%	13	100%	12	100%	11	100%	150	100%
Year																					
2010-2016		8	26%	5	21%	3	19%	1	6%	8	57%	1	8%	3	23%	0	0%	5	45%	34	23%
2017		10	32%	9	38%	8	50%	4	25%	1	7%	7	54%	6	46%	3	25%	3	27%	51	34%
2018-2019		13	42%	10	42%	5	31%	11	69%	5	36%	5	38%	4	31%	9	75%	3	27%	65	43%
Total		31	100%	24	100%	16	100%	16	100%	14	100%	13	100%	13	100%	12	100%	11	100%	150	100%

Appendix 2. Clusters and variables (dependent and independent)

Variables (dependent quantitative studies)

	Cl_1		Cl_2		Cl_3		Cl_4		Cl_5		Cl_6		Cl_7		Cl_8		Cl_9		Tot.	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Independent variables																				
1-5	9	82%	6	55%	3	50%	7	47%	2	100%	4	80%	5	71%	0	0%	3	60%	39	61%
6-10	1	9%	5	45%	1	17%	7	47%	0	0%	1	20%	1	14%	1	50%	2	40%	19	30%
>10	1	9%	0	0%	2	33%	1	7%	0	0%	0	0%	1	14%	1	50%	0	0%	6	9%
Total	11	100%	11	100%	6	100%	15	100%	2	100%	5	100%	7	100%	2	100%	5	100%	64	100%

Type of dependent variable

Business performance	3	27%	0	0%	1	17%	8	53%	1	50%	2	40%	2	29%	1	50%	1	20%	19	30%
Service quality, customer satisfaction, loyalty, intention to book	4	36%	3	27%	1	17%	3	20%	1	50%	0	0%	1	14%	1	50%	3	60%	17	27%
Consumer behavior, guest reviews, trust	2	18%	4	36%	0	0%	3	20%	0	0%	1	20%	1	14%	0	0%	1	20%	12	19%
Social and environmental performance	1	9%	2	18%	1	17%	0	0%	0	0%	1	20%	3	43%	0	0%	0	0%	8	13%
Other	1	9%	2	18%	3	50%	1	7%	0	0%	1	20%	0	0%	0	0%	0	0%	8	13%
Total	11	100%	11	100%	6	100%	15	100%	2	100%	5	100%	7	100%	2	100%	5	100%	64	100%

Appendix 3. Clusters and methodologies

Methodologies	Cl_1		Cl_2		Cl_3		Cl_4		Cl_5		Cl_6		Cl_7		Cl_8		Cl_9		Tot.	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Content analysis	15	48%	7	29%	2	13%	0	0%	7	50%	4	31%	2	15%	6	50%	5	45%	48	32%
Regression	7	23%	6	25%	4	25%	11	69%	0	0%	4	31%	3	23%	1	8%	3	27%	39	26%
Other statistical methodologies	0	0%	4	17%	8	50%	3	19%	3	21%	5	38%	6	46%	3	25%	1	9%	33	22%
Interviews, participant observations, ethnographic fieldwork	5	16%	3	13%	2	13%	0	0%	3	21%	0	0%	1	8%	2	17%	1	9%	17	11%
Structural equation modeling	4	13%	4	17%	0	0%	2	13%	1	7%	0	0%	1	8%	0	0%	1	9%	13	9%
Total	31	100%	24	100%	16	100%	16	100%	14	100%	13	100%	13	100%	12	100%	11	100%	150	100%

Appendix 4. Cluster and theoretical background

Type of study	Theory	Cl_1		Cl_2		Cl_3		Cl_4		Cl_5		Cl_6		Cl_7		Cl_8		Cl_9		Tot.	
		#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Marketing and consumer behavior		5	16%	11	46%	3	19%	8	50%	3	21%	1	8%	2	15%	2	17%	3	27%	38	25%
Sharing economy, experience economy, moral economy , cultural economy, and collaborative economy		10	32%	1	4%	4	25%	0	0%	1	7%	1	8%	0	0%	3	25%	2	18%	22	15%
Gentrification, destination management, sustainability, spatial patterns, displacement theory		1	3%	3	13%	2	13%	0	0%	4	29%	4	31%	5	38%	1	8%	0	0%	20	13%
Performance, revenue and price management		2	6%	1	4%	2	13%	8	50%	1	7%	2	15%	2	15%	0	0%	2	18%	20	13%
Atheoretical		5	16%	0	0%	3	19%	0	0%	2	14%	2	15%	2	15%	0	0%	1	9%	15	10%
Other		3	10%	1	4%	0	0%	0	0%	3	21%	0	0%	1	8%	5	42%	0	0%	13	9%
Social exchange, transformational leaning, relational and social practice theory, social capital		2	6%	5	21%	0	0%	0	0%	0	0%	2	15%	0	0%	0	0%	3	27%	12	8%
Disruptive innovation		3	10%	2	8%	2	13%	0	0%	0	0%	1	8%	1	8%	1	8%	0	0%	10	7%
Total		31	100%	24	100%	16	100%	16	100%	14	100%	13	100%	13	100%	12	100%	11	100%	150	100%

Appendix 5. Cross-cited papers included in each cluster.

Clusters

Papers

Conceptual studies on the sharing economy (cluster 1)	Bernardi (2018); Cheng (2016a); Cheng (2016b); Chung (2017); Decrop et al. (2018); Dornier & Selmi (2018); Dredge & Gyimóthy (2015); Fang, Ye & Law (2016); German Molz (2013); Heo (2016); Heo, Blai & Choi (2019); Johnson & Neuhofer (2017); Jordan & Moore (2018); Kannisto (2017); Mikolajewska-Zajac (2018); Mody, Suess & Lehto (2017); Mody, Suess & Lehto (2019); Möhlmann (2015); O'Regan & Choe (2017); Palos-Sanchez & Correia (2018); Pappas (2017); Priporas et al. (2017b); Razli, Jamal & Zahari (2017); Schuckert, Peters & Pilz (2018); Sotiriadis & Van Zyl (2017); Tescaşiu et al. (2018); Tham (2016); Tussyadiah & Park (2018); Volgger et al. (2018); Wang & Nicolau (2017); Zgolli & Zaiem (2018)
Consumer behavior (cluster 2)	Andriotis & Agiomirgianakis (2014); Birinci, Berezina & Cobanoglu (2018); Bocker & Meelen (2017); Boxall, Nyanjom & Slaven (2018); Fagerstrøm et al. (2017); Forno & Garibaldi (2015); Garau-Vadell, Gutiérrez-Taño & Díaz-Armas (2018); Guttentag (2015); Guttentag et al. (2017); Henama (2018); Huber (2017); Kim et al. (2018); Lutz & Newlands (2018); Mao & Lyu (2017); Nguyen et al. (2018); Olya et al. (2018); Poon & Huang (2017); Richard & Cleveland (2016); Richard, Murphy & Altin (2018); Stabrowski (2017); Sthapit & Jiménez-Barreto (2018); Toni, Renzi & Mattia (2016); Voytenko Palgan, Zvolaska & Mont (2017); Williams & Horodnic (2017)
Airbnb: Spatial patterns and substitution threats (cluster 3)	Abdar & Yen (2017); Adamiak (2018); Gunter & Önder (2018); Hajibaba & Dolnicar (2017); Karlsson & Dolnicar (2016); Karlsson, Kemperman & Dolnicar (2017); Kennedy et al. (2018); Koh & King (2017); Quattrone et al. (2018); Sigala (2017); Tussyadiah & Pesonen (2016); Tussyadiah & Pesonen (2018); Tussyadiah & Zach (2017); Varma et al. (2016); Young, Corsun & Xie (2017); Zervas, Proserpio & Byers (2017)
Airbnb: Determinants of performance (cluster 4)	Benítez-Aurioles (2018a); Benítez-Aurioles (2018b); Chang & Wang (2018); Chen & Xie (2017); Cheng et al. (2019); Ert, Fleischer & Magen (2016); Gibbs et al. (2018a); Gibbs et al. (2018b); Lee & Kim (2018a); Lee & Kim (2018b); Liang et al. (2017); Magno, Cassia & Ugolini (2018); Mahadevan (2018); Priporas et al. (2017a); Proserpio, Xu & Zervas (2018); Wu, Zeng & Xie (2017)
Host-guest relationships (cluster 5)	Aznar et al. (2016); Bashir & Verma (2016); Buchberger (2014); Cova & White (2010); Dén-Nagy & Király (2014); Ferreri & Sanyal (2018); Forgacs & Dimanche (2016); Gant (2016); Goh (2015); Oses Fernández, Kepa Gerrikagoitia & Alzua-Sorzabal (2018); Paulauskaite et al. (2017); Prayag & Ozanne (2018); Roelofsens (2018); Smith et al. (2018)

Social impact and regulation (cluster 6)	Aznar et al. (2017); Camilleri & Neuhofer (2017); DiNatale, Lewis & Parker (2018); Goodman (2016); Gurrán & Phibbs (2017); Horn & Merante (2017); Kijučnikov, Krajičik & Vincúrová (2018); Lambea Llop (2017); Martín et al. (2018); Martín, Gualita & Solinas (2018); So, Oh & Min (2018); Wegmann & Jiao (2017); Xie & Kwok (2017)
Economic impact (cluster 7)	Blal, Singal & Templin (2018); Boros et al. (2018); Bowen & Whalen (2017); Brauckmann (2017); Choi et al. (2015); Dudás et al. (2017a); Dudás et al. (2017b); Freytag & Bauder (2018); Gutiérrez et al. (2017); Lalicic & Weismayer (2018); Liu & Mattila (2017); Oskam & Boswijk (2016); Pizam (2014)
Airbnb and hotel strategies: Qualitative comparisons (cluster 8)	Akbar & Tracogna (2018); Alrawadieh & Alrawadieh (2018); Belarmino et al. (2017); Bridges & Vásquez (2018); Brochado, Troilo & Shah (2017); Cheng & Foley (2018); Cheng & Jin (2019); García-Ayllon (2018); Gunter (2018); Guttentag & Smith (2017); Martín-Fuentes et al. (2018); Roelofsen & Minca (2018)
Host-guest relationships in non-Airbnb P2P APs (cluster 9)	Celata, Hendrickson & Sanna (2017); Chen (2018); Deale & Crawford (2018); Lampinen (2016); Liu, Nie & Li (2016); Malazizi, Alipour & Olya (2018); Rosen, Lafontaine & Hendrickson (2011); Smaliukiene, Chi-Shiun & Sizovaite (2015); Tussyadiah (2016); Wiles & Crawford (2017); Xie & Mao (2017)