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Abstract

Purpose - The main purpose of this study is to map the service quality (SQ) of Airbnb, to provide additional insight for such top player of short-stay accommodation in the sharing economy context.

Design/methodology/approach - A mixed-method approach is employed in two phases. In the qualitative phase, 112,138 online review comments of Airbnb guests were analyzed to generate the service attributes. In the quantitative phase, an online survey (n = 814) was conducted to calculate the performance and importance values of extracted attributes to plot them in an Importance-Performance Analysis (IPA) matrix.

Findings - A holistic image of the Airbnb extracted service attributes was presented through the IPA plot. Four types of SQ strategies were proposed, considering the actions priority. “Price reasonability” was the

most important service attribute of Airbnb for guests, whereas “Check-in flexibility” was the best performed one.

Practical implications - Our results shed light on the most relevant SQ attributes of Airbnb and proposed suitable strategies that can prioritize relevant stakeholders’ actions and decisions. The study significantly contributes to all decision makers involved in the short-stay accommodation sharing industry to further understand and develop SQ.

Originality/value - This research, employing a comprehensive hybrid method, opens a lens to see more clearly the positioning of different attributes of Airbnb service from importance and performance viewpoints. As a contribution, the SQ of Airbnb was mapped by conducting an IPA for the first time in the literature.

Keywords: Service quality, review comments, sharing economy, short-stay accommodation, Leximancer, Airbnb.

1. Introduction

The sharing economy concept refers to benefiting from idle capacity by providing temporary access through an online platform for people who need it, in which both the supply and demand side are consumers (Ranjbari *et al.*, 2018). Emerging sharing economy companies during the last decade have dramatically affected market share of hotels and traditional rental accommodation sector worldwide (Zervas *et al.*, 2017). In such a competitive environment service quality (SQ), as a key factor in the hospitality sector, can bring competitive advantage and customer satisfaction for the survival of the business (Dedeoğlu and Demirer, 2015).

In terms of SQ, it is necessary for service businesses, specifically in the field of hospitality and tourism, to have a clear evaluation of their customers’ perception of quality about their service to remain competitive in the market. Despite the considerable disruptive effect that sharing economy companies, including Airbnb, have brought to the hospitality industry, the majority of the research in this field studied SQ in relation to upscale and luxury hotels and additional research and insight is required in other segments (Rauch *et al.*, 2015). Moreover, SQ measurement and analysis for companies, such as Airbnb,

that adopt online platforms to provide peer-to-peer accommodation sharing, seems to be more challenging than hotels or ordinary rental accommodation. This highlights the serious need for customizing SQ measurements based on the specific context of accommodation sharing, which has been less examined by scholars with a lack of reliable qualitative investigations, particularly based on user-generated content and big data analysis. In this regard, Importance-Performance Analysis (IPA) is a useful tool that can help the stakeholders to visualize their service attributes in a two-dimensional matrix of importance and performance (Martilla and James, 1977). The IPA output plot visually provides the situation of any attributes and prioritizes related SQ improvement decisions.

The main purposes of this research are to (1) develop an IPA analysis and related plot for SQ gaps in the short-stay accommodation industry by mapping Airbnb service attributes as a case, and (2) suggest appropriate SQ improvement strategies to Airbnb hosts and related stakeholders with priorities and actions. To do this, the study employs a mixed-method approach. First, we adopt a qualitative research to extract the SQ attributes through a big dataset of online comments by Airbnb guests in Western Australia. In the second phase, in order to implement the IPA, we conduct an online survey of Airbnb customers to calculate the importance and performance scores for all the SQ attributes and therefore, visualize the position of Airbnb SQ. Finally, we present some suggestions to improve such SQ attributes which are considered a priority.

The remainder of the paper is organized as follows. Section 2 reviews the literature in hospitality SQ, its measurement in general and in the sharing economy context. Section 3 presents the mixed methodology. Section 4 presents the data analysis and related findings. Section 5 discusses the findings and section 6 concludes our study, with related implications, limitations and suggestions for future avenues of research.

2. Literature review

2.1. SQ measurement

SQ as a major concept in any competitive business has been important for the relevant incumbents and stakeholders, and is extensively studied in the academic literature. Initially, Parasuraman *et al.* (1985) presented a five-dimension scale for SQ known as the SERVQUAL model including tangibles, reliability, responsiveness, assurance, and empathy. SERVQUAL has become one of the most broadly used scales to measure the SQ and numerous studies have applied it over recent years in a vast variety of industries, such as (Akbaba, 2006), restaurants operations (Nam and Jeonglyeol, 2011), shopping malls (Chen, 2011), and

e-learning (Udo *et al.*, 2011). Notwithstanding the generic acceptability of SERVQUAL, it has been challenged in several studies during decades in terms of conceptual basis (Cronin and Taylor, 1994) and process orientation (Richard and Allaway, 1993).

The emergence of online service platforms in the age of the internet and e-commerce attracted much attention to develop customized SQ models that can grasp the specific attributes driven by such technology advancements. Zeithaml *et al.* (2002) developed electronic SQ (e-SQ) through a three-stage process using exploratory focus groups, empirical data collection and analysis. Yoo and Donthu (2001) presented the SITEQUAL scale to measure perceived quality of internet shopping with four dimensions, namely ease of use, design, speed, and security. Zhu *et al.* (2002) proposed an IT-based model that links customer perceived IT-based service options to traditional service dimensions. Santos (2003) presented a conceptual model for e-SQ with incubative (ease of use, appearance, linkage, structure and layout, and content) and active (reliability, efficiency, support, communication, security, and incentives) dimensions. Parasuraman *et al.* (2005) categorized multiple-item scale as two stages : first, E-S-QUAL to measure the SQ of shopping online on websites with 22 items in four dimensions (including: efficiency, fulfillment, system availability, and privacy) and second, an 11-item scale in three dimensions (including "responsiveness, compensation, and contact") namely E-RecS-QUAL for customers who had non-routine dealing with the sites.

Overall, these studies highlight the need to customize SQ measurement based on the context of what is investigated. Seth *et al.* (2005), after reviewing 19 different SQ models, showed that the attributes and measurement of SQ is not isolated and customers' expectations are changing over time based on factors such as time, service setting, and situation.

2.2. SQ in the context of shared-based accommodation

The tourism and hospitality industry was one of the first industries to be importantly influenced by the rise of the sharing economy, with several key fundamentals being affected. Several scholars have examined how shared economy-based models are influencing destination options, travel facilities, and length and quality of stay (Bremser and Alonso-Almeida, 2017), price (Wang and Nicolau, 2017), and overall consumer experience (Pappas, 2019). However, prior sharing economy literature has mainly focused on some issues, such as: trust and reputation (Ert *et al.*, 2016), sustainability issues (Martin, 2016; Ranjbari, Morales-Alonso, *et al.*, 2019), insurance (Ranjbari, Shams Esfandabadi, *et al.*, 2019) and its

business model (Bellos *et al.*, 2017; Ranjbari *et al.*, 2017), while a few studies have investigated SQ in the context of the sharing economy in the lodging industry.

Priporas *et al.* (2017) claimed to have conducted the first study investigating Airbnb's SQ. In their study, they explored customers' perceptions of SQ prospects in Airbnb listings in Thailand, using the scale presented by Akbaba (2006). Their findings showed some differences from SQ perspective and priorities between typical hotels and Airbnb accommodation such as the tangible dimension of SQ that has been a high priority for hotel customers in previous studies (Akbaba, 2006), unlike Airbnb. Recently, Ju *et al.* (2019) in another study, explored Airbnb SQ attributes and their asymmetric effects on customer satisfaction. They employed a mixed-method approach to identify the key SQ attributes of Airbnb and its dimensionality, then studied how these attributes can influence customer satisfaction. Their findings indicated that Airbnb has multiple SQ attributes associated with website, host, and facility that produce distinctive effects on customer satisfaction. Sun *et al.* (2019) based on a qualitative design identified accuracy, cleanliness, rooms and facilities, location, personalized service, and value as the six dimensions of measuring Airbnb SQ.

Although a limited number of research papers have explored the whole SQ concept of Airbnb, there are some studies that considered just some of service-related factors separately, including: Peer-to-peer interactions (Moon *et al.*, 2019), quality and quantity attributes of hosts (Sun *et al.*, 2019), transaction experience (Liang *et al.*, 2018), trust (Ert and Fleischer, 2019), value co-creation (Jeannette and Barbara, 2017), hospitality experience (Sthapit and Jiménez-Barreto, 2018), and customer experience and review system (Cheng and Jin, 2019). Table I summarizes the service-related attributes of Airbnb which have been reviewed through analysis of the available literature to date.

Table I. Summary of literature on SQ attributes and service-related attributes of Airbnb.

Attributes	Highlights	Author(s)
SQ attributes:		
	"tangibles, adequacy service supply, understanding and caring, assurance, and convenience" found as the most important ones.	Priporas *et al.* (2017)
	Found multiple SQ attributes for Airbnb associated with website, host, and facility.	Ju *et al.* (2019)

	Six dimensions identified: accuracy, cleanliness, rooms and facilities, location, personalized service, and value.	Sun *et al.* (2019)
Service-related attributes:		
Peer-to-peer interactions	Guests perceive more positive "overall interaction experiences" than hosts.	Moon *et al.* (2019)
Quality and quantity attributes of host	Host quality attributes significantly influence the listing performance through cue-based trust.	Xie and Mao (2017)
Transaction experience	Transaction-based satisfaction significantly affects experience-based satisfaction. Trust is the "mediator between transaction-based satisfaction and repurchase intention".	Liang *et al.* (2018)
Trust	"The cognitive trust-identity attachment building mechanism is more effective than affective trust-bond attachment depending on the emotional distance between the users and hosts."	Yang *et al.* (2018)
	"Well-traveled individual" and "eager to meet new people" are two patterns of host self-presentation.	Tussyadiah and Park (2018)
Value co-creation	Six distinct practices shape guest-host practices and value formation in Airbnb.	Jeannette and Barbara (2017)
Hospitality experience	Memorable experiences are related to "the social interactions with the host, the attitude of the host and the location of the accommodation".	Sthapit and Jiménez-Barreto (2018)
Customer experience and review system	Analyzed the review system of Airbnb platform and produced a concept map containing 8 themes as "stay, host, place, location, apartment, room, city and home".	Brochado *et al.* (2017)
	Analyzed the review system of Airbnb platform and produced a concept map containing 4 themes as "host, location, amenities and recommend".	M. Cheng and Jin (2019)

Considering all previous evidence, there is a lack of empirical research which focuses on mapping the whole service attributes in the context of short-stay accommodation industry rather than focusing on just a single service type of attribute. To cover this gap, our study presents a holistic image of SQ in shared-based accommodation, based on Airbnb evidence. Specifically, it aims at providing more clarity about the

position of all service attributes in an importance and performance matrix, derived by an IPA. This approach has never been carried out before in a sharing economy based setting.

3. Methodology

The current investigation involves a mixed-method approach to carry out the IPA and map the attributes of services provided by Airbnb. This study adopts an inductive approach for user-generated-content mining to extract the attributes that characterize review comments in different clusters.

In the first step, a big dataset of online review comments of Airbnb users obtained from the InsideAirbnb website ("Insideairbnb", 2019) was the object of a data-mining analysis for identifying themes as a qualitative approach. In the next step, using the results of the qualitative analysis, a questionnaire was designed and distributed online, allowing the performance and importance of attributes to be calculated. Finally, in the last step, an IPA plot was constructed to draw the situation of SQ attributes for Airbnb.

3.1. Qualitative approach: data-mining procedure

According to the report provided by Tourism Council WA (2019), the number of Western Australia's properties listed on Airbnb has been increasing dramatically in recent years, starting from less than 1000 in 2012 and reaching more than 12,000 listings in 2018, and now Airbnb is roughly half the size of the traditional hotel industry. Therefore, due to the significant rate of increasing Airbnb listings that has attracted the attention of hospitality incumbents as well as being one of the most tourist-targeted destinations for Airbnb in Australia, Western Australia was selected as the case for this research.

The total number of 112,138 online reviews posted by guests on the Airbnb platform during 2018 in Western Australia was the main data source of this study. Before starting the data analysis process, some potentially messy data was removed manually to refine the dataset as far as possible, then OpenRefine software was used to remove non-English review comments, which led to a final dataset composed by 107,798 review comments.

We used the software Leximancer to perform the qualitative content analysis of the dataset to identify the attributes of Airbnb services. According to Smith and Humphreys (2006), Leximancer goes beyond keyword searching by extracting "thesaurus-based concepts" (its own dictionary of terms as concept classes) based on "word frequency" (the total number of occurrence) and "co-occurrence" (strength of

main relationships between concepts) usage. In order to extract information based on the co-occurrence principle, Leximancer employs two stages, namely semantic and relational, and uses a different statistical algorithm for each stage that comprises non-linear dynamics and machine learning. In the semantic extraction stage, a meaningful name of each concept is provided to support interpretation and visualization. Then, relational extraction stage using the "learned semantic classifiers" proceeds with the classification of the text segments.

The main intention for employing data-mining software in this study was eliciting the attributes of Airbnb service directly from the review comments by customers, instead of using literature, as utilized in many previous studies. That was because the sharing economy is a new, emerging phenomenon and there was limited research about its SQ. Therefore, the IPA is then based on attributes extracted from customers' comments to prepare a more customized tool for SQ analysis rather than using existing questionnaires which are prevalent in the hospitality literature.

The first step of analysis was performed through an unsupervised learning process. During this process, the input dataset was processed without any labeling to identify all kinds of unknown patterns considering frequency and co-occurrence of the information. Therefore, the preliminary list of concepts which are named concept seeds was generated. In the next step, a supervised learning process was done. Unlike the previous step, we labelled some generated concepts and merged them together based on their potential to be considered as the same. For instance, concepts such as "comfortable", "comfy", and "cozy" were merged into one concept named "comfortable" and words such as "bath", "bathroom", "shower", and "toilet" were merged into "bathroom". Throughout another unsupervised learning process, the model was run again and, at the end of this stage, final concepts were generated within themes in a conceptual map of service attributes. The obtained result of this phase was used as the input for the next phase, which is conducting the IPA.

3.2. Quantitative approach: IPA

To plot the IPA, the concepts identified in the previous phase as Airbnb service attributes are scored from customers' perspectives of importance and perceived performance. The IPA plot is categorized into four quadrants to identify the priorities to improve in managerial decisions. Martilla and James (1977) named the quadrants "Keep up the good work" (Q1 at the top right corner of the matrix with both high importance and perceived performance scores), "Concentrate here" (Q2 at the top left corner of the matrix with high

importance and low perceived performance), “Low priority” (Q3 at the bottom left corner of the matrix with both low importance and performance scores) and “Possible overkill” (Q4 at the bottom right corner of the matrix with low importance and high performance).

To calculate the importance and performance scores of attributes, a questionnaire was developed based on the results of data-mining and themes analysis. The survey was conducted online and was comprised of five sections, namely accommodation and facilities, pleasure and joy, neighborhood, hosting, and value, containing 22 short questions. Airbnb guests were asked to rate the performance of Airbnb’s service attributes and the overall satisfaction with their Airbnb stay experience using a five-point Likert scale, ranging from strongly disagree to strongly agree. In order to modify any unclear point and misleading information, a pre-test involving seven Airbnb guests was conducted. Besides, a short explanation regarding what exactly performance and importance mean in the context of our research was added to the questionnaire to avoid any possible confusion.

Despite many published IPA studies having used the direct method to measure the importance (Lai and Hitchcock, 2016), and asked their respondents to rate directly the importance of each attribute, indirect methods such as regression coefficients have been used to measure the importance of service attributes, too (Phadermrod *et al.*, 2019). Lowenstein (1995) stated that direct methods of measuring importance reflect a social desirability or awareness bias as well as a uniformly high-ranked importance as many respondents may wish to rate the importance of any attributes very important. Therefore, to gain more accurate importance scores and avoid uniformly high-ranked importance, a stepwise linear regression was employed to calculate the importance of each attribute based on the relationships between attributes’ performance as independent variables and overall satisfaction as dependent variable, instead of asking customers to rate the importance directly to avoid discussed potential errors reflected by such direct method. The performance for each attribute of Airbnb services was measured by calculating the grand mean of performance ratings from all survey participants.

4. Data analysis and results

4.1. Data-mining results

After data processing by Leximancer, the conceptual map of the service attributes of Airbnb based on customers’ review comments was derived, as shown in Figure 1.

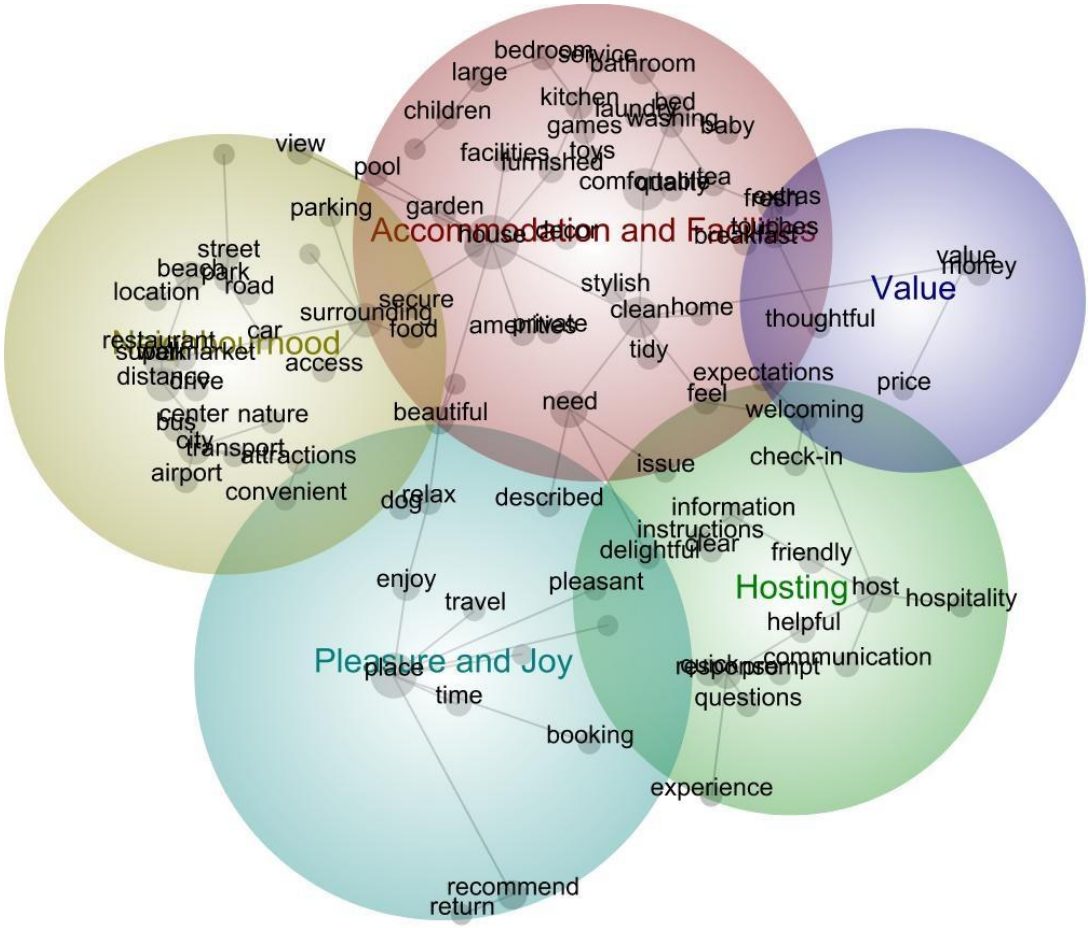

Figure 1. Conceptual map of Airbnb service attributes

As illustrated with more detail in Table II, the service attributes of Airbnb were merged into five themes, which were named according to their content, comprising *accommodation and facilities*, *pleasure and joy*, *neighborhood*, *hosting*, and *value* containing 98 concepts. Each concept represented an attribute related to the service provided by Airbnb and a group of related concepts together create a theme. Concept location and theme clustering were created based on word frequency and co-occurrence.

Table II. Statistical information of themes and related concepts

Accommodation and facilities			Connectivity score: 100%					
Concept	Count	Relevance (%)	Concept	Count	Relevance (%)	Concept	Count	Relevance (%)
house	51556	100	extras	4274	8	secure	2194	4
comfortable	29065	56	private	5088	10	toys	1614	3
clean	28501	55	tidy	4579	9	home	1893	4

need	24381	47	garden	4340	8	children	1911	4
bed	11906	23	large	4215	8	games	1351	3
beautiful	10824	21	bedroom	3947	8	quality	1132	2
kitchen	8462	16	breakfast	3685	7	laundry	877	2
touches	8132	16	tea	2490	5	baby	1226	2
feel	6962	14	stylish	3135	6	service	1040	2
furnished	5779	11	washing machine	2277	4	play	789	2
bathroom	5676	11	pool	2785	5	modern	390	1
fresh	4623	9	decor	2626	5			
amenities	6065	12	facilities	2413	5			
Pleasure and joy			Connectivity score: 71%					
Concept	Count	Relevance (%)	Concept	Count	Relevance (%)	Concept	Count	Relevance (%)
place	45269	88	described	4444	9	return	1629	3
recommend	19158	37	dog	3027	6	stars	693	1
enjoy	11525	22	travel	2988	6	stay	402	1
time	9014	17	booking	3281	6			
relax	6059	12	pleasant	2175	4			
Neighborhood			Connectivity score: 55%					
Concept	Count	Relevance (%)	Concept	Count	Relevance (%)	Concept	Count	Relevance (%)
walk	16576	32	airport	4505	9	transport	2220	4
surrounding	17984	35	bus	2891	6	road	2027	4
distance	13948	27	access	2932	6	park	1955	4
city	14382	28	food	2786	5	supermarket	1321	3
beach	12499	24	nature	2938	6	attractions	1314	3
restaurant	6559	13	car	2551	5	convenient	1092	2
view	8009	16	location	2793	5	peaceful	1042	2
center	5403	10	parking	2512	5	shops	224	1
drive	4116	8	street	2155	4			
Hosting			Connectivity score: 47%					
Concept	Count	Relevance (%)	Concept	Count	Relevance (%)	Concept	Count	Relevance (%)
host	25862	50	communication	5922	11	experience	3015	6
response	10288	20	check-in	2910	6	instructions	1618	3
quick	7828	15	questions	2316	4	clear	1364	3
welcoming	8256	16	information	2768	5	prompt	1454	3
friendly	8315	16	hospitality	3502	7	issue	1458	3
helpful	7374	14	delightful	2534	5			
Value			Connectivity score: 9%					
Concept	Count	Relevance (%)	Concept	Count	Relevance (%)	Concept	Count	Relevance (%)
value	5793	11	thoughtful	2946	6	price	1227	2
money	5186	10	expectations	1942	4			

The connectivity score that denotes the relative importance of the themes (the most important of which is the top theme at 100%) (Cheng and Jin, 2019) is calculated by linking concepts within that theme, giving

a way to measure the importance of a theme within the total analyzed database. The most important theme of Airbnb service, was *accommodation and facilities* with a connectivity score of 100%, therefore *pleasure and joy* (71%), *neighborhood* (55%), *hosting* (47%), and *value* (9%) were in the less important levels, respectively. The 10 most frequent concepts and their importance were *house* (51556/100%), *place* (45269/88%), *comfortable* (29065/56%), *clean* (28501/55%), *host* (25862/50%), *need* (24381/47%), *recommend* (19158/37%), *surrounding* (17984/35%), *walk* (16576/32%), and *city* (14382/28%), respectively.

Therefore, in alignment with previous studies, the key service attributes of Airbnb emerged directly from our users' comments analysis including elements such as *accommodation and facilities*, *pleasure and joy*, *neighborhood*, *hosting*, and *value* provides clearly more detailed results than previous findings by Priporas *et al.* (2017) which studied Airbnb SQ based on 5 items of Akbaba's proposed scale including "tangibles, adequacy service supply, understanding and caring, assurance, and convenience" and also the ones of Ju *et al.* (2019) which presented the SQ of Airbnb in a qualitative analysis including host, website, and facility.

4.2. IPA results

The questionnaire was distributed online using Google forms via social media networks and academic contact listings available worldwide. The responses were collected from August 13, 2019 to January 5, 2020 from people who had a previous experience of using Airbnb at least for one time. A total of 814 completed questionnaires out of 856 collected questionnaires were analyzed and a high internal consistency of the analyzed responses was confirmed with Cronbach's alpha reliability test at 0.913.

The performance of each attribute was asked directly from Airbnb guests and the grand mean of all attributes (3.622) was considered as the actual performance mean of the horizontal axis in the IPA plot. To measure the implicit *importance* of each attribute, a regression model was employed. In order to identify the most influential variables in the linear regression model, we performed a stepwise approach in IBM SPSS® software, in which the attributes that were really contributing to the prediction of the dependent variable were detected and the other attributes were excluded. The final adjusted R^2 of the model is 0.604, which indicates that the included predictors account for more than 60% of the variance in the overall users' satisfaction.

The grand mean of implicit *importance* (0.062) that is derived from the coefficients of the regression model was considered as the importance mean of the vertical axis in the IPA plot. Table III provides the calculated *importance* and *performance* of Airbnb service attributes. The implicit *importance* that is presented under the headings *coefficient* and *Beta In* are derived from the stepwise linear regression. The 14 variables that have a coefficient value represent the influential variables, which are accounted for in the model, and the 7 variables that have a *Beta In* are the excluded variables.

Table III. Importance and performance mean of Airbnb service attributes

Attribute		Actual *PERFORMANCE*	Implicit *IMPORTANCE*			
			Coefficient	Beta In	t-statistics	Sig.*
Accommodation and facilities						
A_1	Cleanliness	3.752	0.099		2.927	0.004
A_2	Privacy	3.770	0.095		2.676	0.008
A_3	Safety and security	3.802	0.078		2.211	0.027
A_4	Furniture	3.749	0.076		2.343	0.019
A_5	Decoration	3.719		.048**	1.621	0.105
A_6	Entertainments	3.278	0.045		2.225	0.026
A_7	Extra touches	3.474		.015**	0.534	0.593
Pleasure and joy						
P_1	House as described	3.763	0.086		2.913	0.004
P_2	Enjoyment	3.644	0.065		1.933	0.054
P_3	Pet allowed	3.151		.013**	0.562	0.574
Neighborhood						
N_1	Public transportation	3.612	0.081		3.445	0.001
N_2	Quietness	3.647	0.075		2.840	0.005
N_3	Parking	3.259		.036**	1.465	0.143
N_4	Shopping access	3.606		.026**	0.898	0.369
N_5	City attractions access	3.365		.008**	0.331	0.741
N_6	View	3.532		.002**	0.089	0.929
Hosting						
H_1	Check-in flexibility	3.905	0.095		2.569	0.010
H_2	Response speed	3.828	0.093		2.590	0.010
H_3	Helpfulness and extra help	3.729	0.088		2.999	0.003
H_4	Friendly manner	3.829	0.067		1.857	0.064
Value						
V_1	Price reasonability	3.645	0.113		5.252	0.000

Performance grand mean: 3.622	**Importance grand mean:** 0.062

* Probability of F for entry: 0.05, for removal: 0.1

** Predictors in the Model: (Constant), h4, a1, p1, v1, h3, a3, n1, p2, n5, h2, a5, h1, a7, a2

Focusing on the data provided in Table III, the minimum actual performance among all the attributes refers to the accommodation being *pet allowed*, whereas the maximum one addresses *check-in flexibility* of hosts. In terms of implicit importance, the minimum and maximum refer to *view* and *price reasonability*, respectively. Considering the theme *accommodation and facilities*, *cleanliness* was the most important attribute, followed by *privacy* due to their higher regression coefficients. However, these attributes are put in the third and second place in terms of the actual performance obtained from the questionnaire data. The best performance in this theme goes to *safety and security* and the lowest performance is *entertainments* provided in the house. In the theme *pleasure and joy*, the first ranked attribute in terms of both performance and implicit importance is *house as described*. The interesting point is that the lowest performance and implicit importance are also both addressing one attribute that is *pet allowed*. The same cannot be observed for the theme *neighborhood*. The highest performance in this theme points to *quietness*, while this attribute is the most important attribute of this theme after public transportation. However, the attribute with the lowest performance, which is *parking access*, is not the same as the least important attribute in this theme that is *view*. According to the respondents' viewpoint, *flexibility of hosts for check-in* is the best performed and also the most important attribute in the *hosting* theme. This attribute is followed by the *response speed*, *helpfulness and extra help* and *friendly manner* of the host as the next important attributes, respectively. Finally, *price reasonability* as the only attribute of the *value* theme, which indicates the guests' viewpoint regarding what they have got in return for the money paid among all the other types of available accommodation, is the most important attribute, not only in this theme but also in all five identified themes.

Airbnb service attributes were plotted on the IPA matrix in Figure 2 according to their importance and performance specifications.

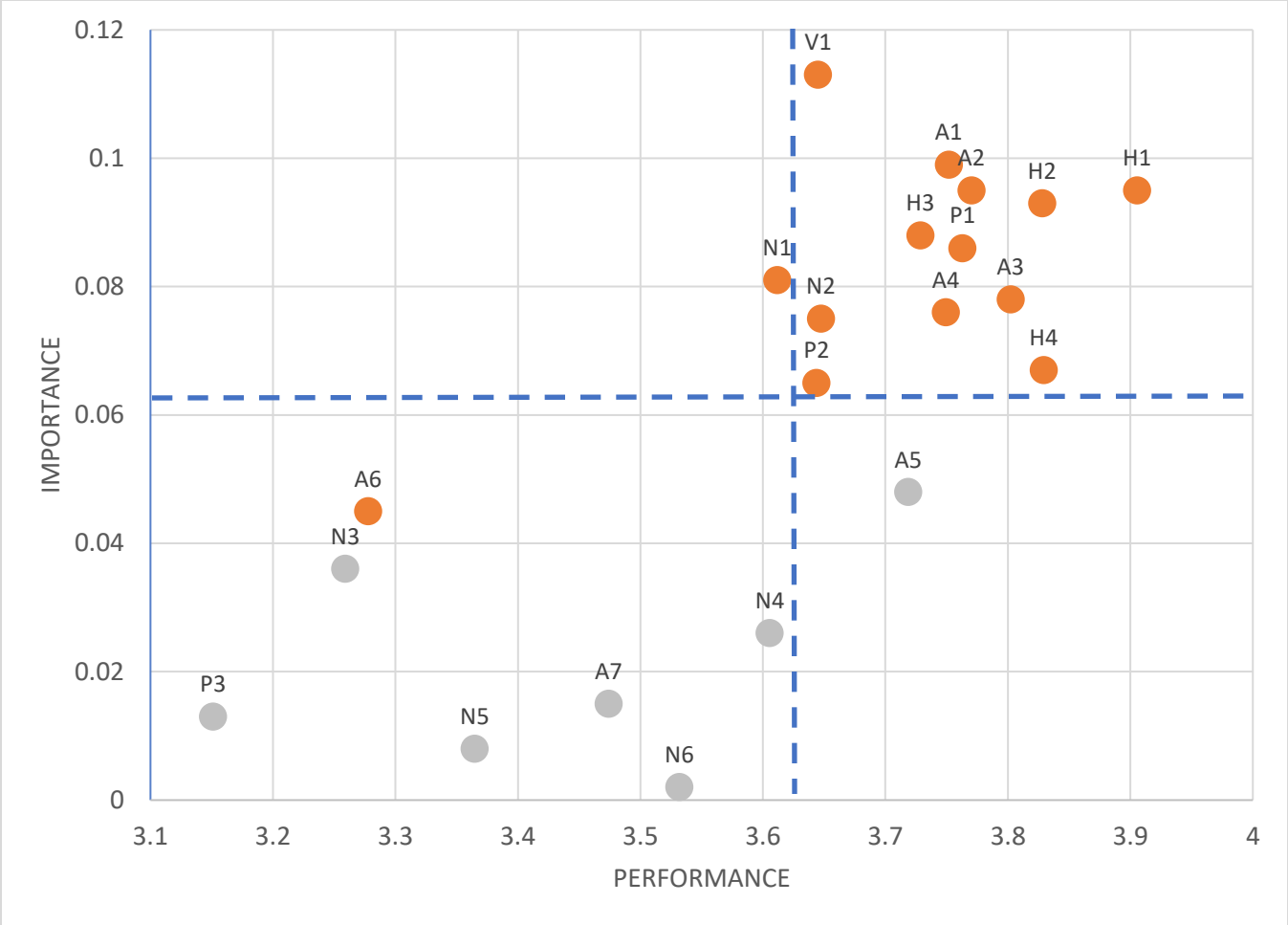

Figure 2. IPA plot for Airbnb service attributes in Western Australia

The IPA plot reveals that 12 attributes out of 21 were positioned in the top-right quadrant, which is "Keep up the good work". These attributes, which represent high-importance and high-performance specifications at the same time, were related to *privacy*, *safety and security*, *furniture* and *cleanliness* belonging to the *accommodation and facilities* theme, *enjoyment*, and *house as described*, belonging to the *pleasure and joy* theme, *quietness* from *neighborhood*, all the attributes of the *hosting* theme including *friendly manner*, *helpfulness and extra help*, *response speed*, and *check-in flexibility* and, finally, *price reasonability* of the *value* theme. It is apparent that the *hosting* theme has performed well as all its attributes are located in the top-right quadrant and they can be considered as the main strengths and potential competitive advantages of Airbnb. The opposite can be said about the *neighborhood* theme that has only one attribute in this quadrant.

The top-left quadrant, which is labeled “Concentrate here”, is the most critical area for managers and policy makers and therefore, calls for increasing attention. This is because it indicates elements that are perceived as very important by customers, but Airbnb has not met them sufficiently. As can be seen in Figure 2, just one service attribute fell in this quadrant, which is *public transportation* from the *neighborhood* theme. The results demonstrate the good performance of Airbnb within the themes of *accommodation and facilities*, *pleasure and joy*, *hosting* and *value* as their attributes didn’t fall in this quadrant.

Besides, a considerable number of service attributes (7 out of 21) fell into the “low priority” quadrant. *Entertainments facilities* and *extra touches* provided by the hosts from *accommodation and facilities* theme, the house being *pet allowed* in the *pleasure and joy* theme, and *view*, *shopping access*, *city attraction access* and *parking* availability belonging to the *neighborhood* theme took place in the bottom-left quadrant of the IPA matrix, which indicates low performance and low importance, simultaneously. Although these attributes can be considered as the minor weakness for the services supplied by Airbnb, they are not in priority of development and investment compared with other attributes. A notable point is that the *hosting* and *value* themes do not have any attributes in this quadrant.

“Possible overkill” in the bottom-right quadrant of the IPA matrix shows a waste of Airbnb resources as they are over-performing in a way which is not considered as important as other attributes for customers. Just one service attribute of Airbnb fell into this quadrant, which is *decoration* from the *accommodation and facilities* theme. This means that in comparison with the other service attributes of the *accommodation and facilities* theme, guests do not pay attention to *decoration* of the accommodation as much as hosts pay attention to it.

Taken together, based on the IPA principles, as shown in Figure 3, the results suggest that each quadrant proposes a different strategy. These strategies would help managers and policy makers of Airbnb and its community of hosts to map the SQ and identify the position of each service attribute to better make decisions for development. They would be also beneficial for potential people who want to monetize their idle capacity by supplying the spare space of their houses to guests through involvement in Airbnb activities.

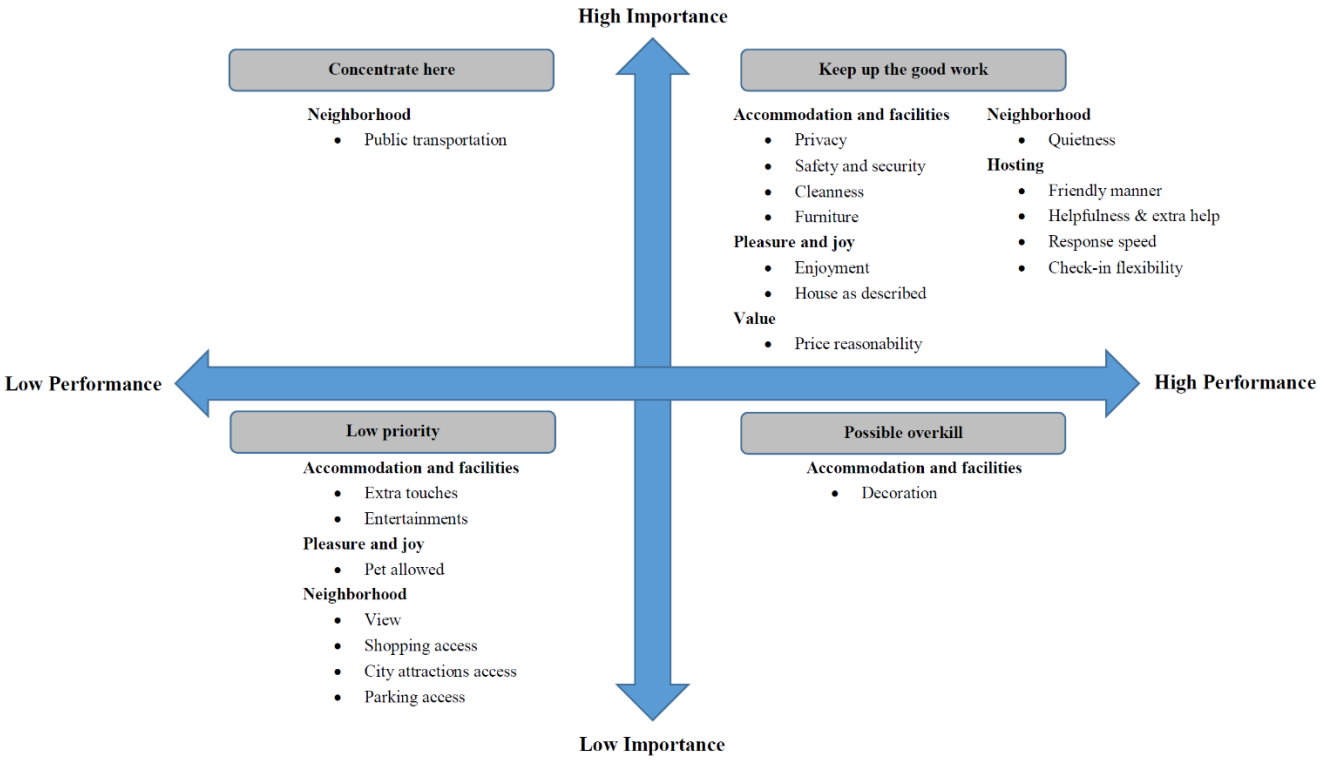

Figure 3. Different strategies for Airbnb service attributes based on the IPA results

5. Discussion

The results of our research revealed that price has an important role among the service attributes of Airbnb. This is in contrast with the research conducted by M. Cheng and Jin (2019), which investigated what Airbnb users care about and concluded that price is not as important as other attributes of Airbnb-related services. Comparing the statistical information obtained from the review comments in the first phase of this study (Table II), and data collected from Airbnb guests in our survey, demonstrates a considerable difference in the importance level for each service attribute. For example, according to the results of the first phase, the *value* theme, with the connectivity score of 9%, was identified as the least important theme of five existing themes. This theme had the lowest frequency rate in the results of the mined review comments. While considering the implicit importance calculated for the attributes in the second phase of this research, it was discovered that the most important attribute from the standpoint of the respondents was their satisfaction about the money they have paid for the accommodation, in comparison with all possible alternative accommodation options, such as hotels, and rental apartments. Figure 4 compares the

connectivity scores obtained from mining of the comments with the implicit importance obtained through the survey. The former is derived from the Leximancer outputs, while the latter is computed by averaging, for each theme, the variables coefficients of the regression model as well as the *Beta In* computed for the excluded variables. All regression coefficients and *Beta In*s are included into the two charts to improve comparability, since no attribute is excluded in the connectivity scores chart.

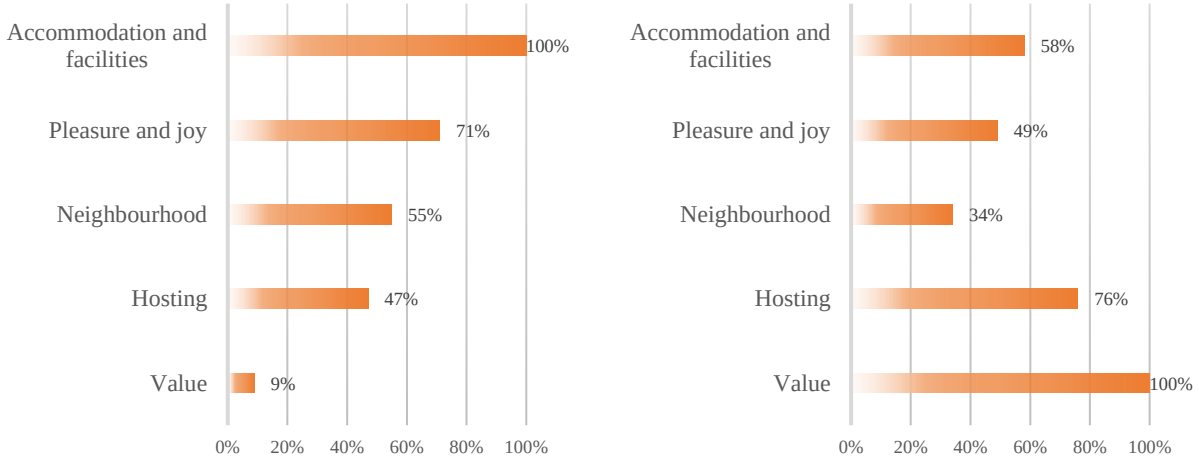

Figure 4. The difference between the level of importance for service themes obtained by review comments mining and survey

Such a noticeable difference between the importance values of service attributes obtained by the content mining approach and surveys might be explained by the Kano model. Specifically, Kano *et al.* (1984) presented a two-dimensional model to clarify customer requirements and how they affect customer satisfaction. In their model, they defined six different types of customer needs, each of which has a different effect on customer satisfaction, namely "attractive", "one-dimensional", "must-be", "indifferent", "reverse", and "questionable". For instance, "attractive" refers to the presence of attributes which affect customer satisfaction positively, while their absence does not influence it. In contrast, "must-be" addresses the absence of those attributes, which cause dissatisfaction, while their presence does not affect satisfaction.

Based on the results of this study, it seems that price is a "must-be" attribute for Airbnb guests as they may think by default that the price of Airbnb must be less than hotels. Therefore, although they don't post many comments about this in Airbnb's platform, they still care about price as an important feature of Airbnb's service, compared with other types of accommodation providers. In other words, guests expect

a higher value in return for their payment in Airbnb in comparison with hotels. If this value expectation is fulfilled, customers are just neutral and, hence, it is not expected that they will reflect their satisfaction about the price in the comments. However, if they get a much higher or much lower value than expected, they may reflect this in their comments. As a result, when price is not a significant attribute mentioned in the comments, it does not necessarily indicate its non-importance. As shown in this study, both importance and performance of the Airbnb service in terms of *price* is high, so it can be inferred that people were mostly satisfied with the prices set for the accommodation and that is why the number of comments referring to this attribute is lower than the other ones. The same can be deduced about the differences between the importance values obtained from the comments using the data-mining method and the survey when applied for the other themes of Airbnb's service attributes, as can be clearly seen in Figure 4.

According to the IPA matrix, a considerable point is that the only attribute plotted in the second quadrant is *public transport* from the *neighborhood* theme. This confirms that although access to the public transportation fleet is important for guests, Airbnb is performing lower than the grand mean. This area is the most critical part of the IPA matrix to be addressed for investment, which suggests applying the "Concentrate here" strategy. Airbnb stakeholders, particularly house owners, should pay more attention to this aspect to improve their performance.

Decoration attribute belonging to the *accommodation and facilities* theme was positioned as the only attribute in the high performance and low importance quadrant. This quadrant means that Airbnb's stakeholders are not using their resources efficiently, since they are providing attributes to their guests that they do not pay attention to. The "Possible overkill" strategy relates to this area, which encourages stakeholders not to invest in this position because it leads to a waste of resources. Consistent with the research conducted by Priporas *et al.* (2017), our results show that in the *accommodation and facilities* theme, *decoration* of furniture is not as important as the other attributes, such as *privacy*, *safety* and *security*, and *cleanliness* for guests and the house owners do not need to take as much care of these attributes. Therefore, it can be realized that, from the *accommodation and facilities* perspective, Airbnb guests need a clean and safe place with privacy rather than nice decoration and different facilities in the house.

According to the results, *view*, *city attraction access* by walking, house being *pet allowed* and *extra touches* provided by hosts and finally, *access to shopping* centers, supermarkets and restaurants are the least important factors for the respondents, respectively, which all were plotted in the "low priority"

quadrant. This can be due to many factors, such as guests choosing to enjoy nature and beautiful attractions rather than shopping, and the availability of food in the house. However, if this survey was conducted for another place, this attribute would have a different importance level due to the particular natural or commercial attractions of that place, as well as the guests' purpose for travel and staying in an Airbnb property.

The results obtained regarding the importance of the *hosting* theme are in line with those presented by M. Cheng and Jin (2019), and Ju *et al.* (2019). All attributes of the *hosting* theme were plotted in the first quadrant, which represents both performance and importance at a high level. This indicates that Airbnb hosts have performed well from the guests' viewpoint and the "Keep up the good work" strategy is proposed to them in relation to *friendly manner*, *helpfulness and extra help*, *response speed*, and *check-in flexibility*. The highest performance value among all attributes calculated for the flexibility of hosts related to *check-in* issues. In comparison with hotels, which mostly have specific times for check-in and check-out of their guests, Airbnb hosts demonstrated a good performance and high flexibility for guests, which emphasizes the element of convenience. Surprisingly, although a good performance regarding the *friendly manner* of the hosts is reported, it seems that the importance of this attribute is not as high as the other attributes in this theme and the hosts have performed better than expected in terms of this attribute. A possible reason for the low expectation of guests regarding the friendly manner of the hosts is that many of these guests did not see the hosts directly and were just in contact with them through Airbnb platform.

The "Low priority" strategy for investment and development is proposed to attributes which are plotted in the third quadrant, with both low importance and performance values. Among all the themes of Airbnb service, *neighborhood* has the largest share in this quadrant as the majority of its attributes (4 out of 6) were plotted there. The following attributes of the *neighborhood* theme including *parking* space, *shopping access*, *city attraction access* by walking and *view* were not important for the guests in comparison with *public transportation* and *quietness* of the accommodation. The second most poorly performing attribute is the *parking* space for personal cars (after house being *pet allowed*) that is also ranked the sixth among the lowest important attributes. The low importance level considered for this attribute shows that Airbnb guests are not using personal cars as their main way of travelling. This is also confirmed by the calculated importance of the *public transport* attribute which is the most important attribute of the *neighborhood* theme, showing that transport means such as train, bus or airplane play a more relevant role. Therefore, it

is recommended to hosts to pay more attention to *public transportation* and *quietness* rather than the other elements that have been identified as the low priority attributes.

The availability of *entertainment* at the accommodation was the poorest attribute in terms of performance among all the other attributes in the *accommodation and facilities* theme and also the third poorest attribute among all themes. However, the low implicit importance calculated for this attribute shows that it is not of a high priority to be improved. This may be due to the purpose of the stays that are mainly holiday/leisure in our study (68.9%) and the attractions that lead people to look for entertainment outside the accommodation and use the house mainly for rest. Therefore, the results show this attribute goes into the third quadrant, with the lowest priority in terms of investment and development.

6. Conclusion and implications

6.1. Conclusion

Our study aims at providing additional insight in the hospitality industry by mapping the SQ of Airbnb, as a well-known platform of the sharing economy, through IPA technique. Although Bi *et al.* (2019) were the first to conduct an IPA in the hotel industry using online review comments, their evidence was based on customers' experience of two five-star hotels in Singapore. Additionally, their research pointed out the limitation of having a prevalence of fake or biased reviews provided on internet-based platforms that do not verify the identity of the reviewer and therefore, can be used in an opportunistic way by the hosts (i.e. hotels, restaurants, etc.). To overcome such a limitation, as well as the possible issues related to the Kano model regarding the different categories of customer requirements and their effects on customer satisfaction, we carried out our investigation in two phases. First, we adopted a qualitative approach, by analyzing a big dataset of Airbnb guests' review comments to identify the emerging SQ attributes. Second, instead of using methods such as sentiment analysis of comments, following the emerging SQ attributes of our analysis, we conducted an online survey to calculate the performance (explicit) and importance (implicit) values required by the IPA.

The first phase of the research required the analysis of 112,138 review comments of guests that have stayed at Airbnb accommodations in Western Australia during 2018. This allowed us to identify five recurring themes of SQ attributes: *accommodation and facilities*, *pleasure and joy*, *neighborhood*, *hosting*, and *value*. These themes were then used to conduct the online survey and plot the IPA matrix according

to their different levels of importance and performance, allowing us to address the most suitable strategies for SQ improvement.

The IPA results showed that the lowest performance among all the 21 attributes refers to the house being *pet allowed*, whereas the highest one refers to *check-in flexibility* of hosts. On the other dimension, the lowest implicit importance refers to *view*, whereas the highest one refers to *price reasonability*.

6.2. Theoretical implications

This research contributes to the literature of SQ in the short-stay accommodation sharing domain by mapping the SQ perception of Airbnb. It proposes a novel two-stage methodology for examining the SQ of Airbnb applying an IPA by combining online review comments and questionnaires for the first time in the sharing economy context. The results unveiled the differences between the perceived importance of service attributes derived from the mentioned two approaches and pointed out the potential causes for such a difference.

6.3. Practical implications

The output IPA plot provided in this research helps stakeholders, hosts, practitioners, and managers to see their service business with different lenses and clearly figure out: (1) what is happening regarding their customers' perception of their service, and (2) where they should invest, decline, or keep the current policies to improve the SQ. As a managerial implication, this study proposes some strategies in four categories, including "Keep up the good work", "Concentrate here", "Low priority", and "Possible overkill". These strategies help managers, decision makers, and Airbnb hosts to better make decisions for the development and improvement of their SQ and prioritize effort on areas which need more attention, helping them invest their resources more efficiently. Due to the lack of sufficient comprehensive investigations into Airbnb's SQ, this research greatly assists in the understanding of Airbnb's service attributes. By applying the IPA, we position these service attributes on the IPA matrix, which helps Airbnb hosts to compare customers' expectations versus their performance and try to increase customer satisfaction in the process. In addition, the results would be beneficial for potential hosts who want to monetize their idle capacity by supplying spare space in their houses to guests through involvement in Airbnb activities.

6.4. Limitations and future research

This study provides the framework for future studies to map the SQ of companies involved in the sharing economy. However, it comes with some limitations. First, our research investigated Airbnb as a case representing the sharing economy context in the short-stay accommodation industry, and the first part of our evidence was just collected in one specific jurisdiction. More research is required on the different areas of the sharing economy activities, such as mobility, finance and other sectors, in order to extend and broadly generalize the results to the sharing economy literature. Second, during the text analysis procedure, non-English comments were removed from the data source. Using more advanced data-mining methods to detect comments in different languages and aggregate them in a unique setting would be highly recommended for future data-mining research on sharing economy platforms due to the diversity of users' nationalities. Third, the purpose of the travel and stay in Airbnb, such as for a holiday or leisure, business or other purposes was not considered in our analysis. If the city is famous for its natural attractions, historical places or commercial activities, the attributes extracted from the review comments of guests may be different to those in another context. Therefore, different purposes-of-stay segmentation and how it may affect the results can be addressed in future investigation regarding Airbnb SQ. Fourth, different nationalities separation was not considered in our study as the respondents with the same nationality, who visited a unique region or geographical area at the same time, were not accessible. Due to different cultural/sociodemographic characteristics of the respondents, the results of the study may be subject to bias. Ideally, further attempts regarding coping with this distinction could prove quite beneficial to the literature. Finally, to clarify the reason behind the existing differences between importance values obtained from the data-mining approach and survey method, although we touched upon the Kano model, it is worth investigating more and further research is required in the future.

References

Akbaba, A. (2006), "Measuring service quality in the hotel industry: A study in a business hotel in Turkey", *International Journal of Hospitality Management*, Vol. 25 No. 2, pp. 170–192.

Bellos, I., Ferguson, M. and Toktay, L.B. (2017), "The Car Sharing Economy : Interaction of Business Model Choice and Product Line Design The Car Sharing Economy : Interaction of Business Model Choice and

Product Line Design", *Manufacturing & Service Operations Management*, No. February.

Bremser, K. and Alonso-Almeida, M. (2017), "Sharing Economy and Tourism: Lights and Shadows", *Management International Conference*, Venice, Italy, pp. 95–100.

Brochado, A., Troilo, M. and Shah, A. (2017), "Airbnb customer experience: Evidence of convergence across three countries", *Annals of Tourism Research*, Elsevier Ltd, Vol. 63, pp. 210–212.

Chen, Y.-H. (2011), "The service quality and consumer behaviour analysis in Taiwan", *Procedia - Social and Behavioral Sciences*, Elsevier B.V., Vol. 25, pp. 16–24.

Cheng, M. and Jin, X. (2019), "What do Airbnb users care about? An analysis of online review comments", *International Journal of Hospitality Management*, Elsevier, Vol. 76 No. September 2017, pp. 58–70.

Cronin, J.J. and Taylor, S.A. (1994), "SERVPERF Versus SERVQUAL : Reconciling Performance-Based and Measurement of Service Quality", *Journal of Marketing*, Vol. 58, pp. 125–131.

Dedeoğlu, B.B. and Demirer, H. (2015), "Differences in service quality perceptions of stakeholders in the hotel industry", *International Journal of Contemporary Hospitality Management*, Vol. 27 No. 1, available at:https://doi.org/10.1108/IJCHM-08-2013-0350.

Ert, E. and Fleischer, A. (2019), "The evolution of trust in Airbnb: A case of home rental", *Annals of Tourism Research*, Elsevier, Vol. 75 No. January, pp. 279–287.

Ert, E., Fleischer, A. and Magen, N. (2016), "Trust and reputation in the sharing economy: The role of personal photos in Airbnb", *Tourism Management*, Elsevier Ltd, Vol. 55, pp. 62–73.

"Insideairbnb". (2019), , available at: http://insideairbnb.com/get-the-data.html (accessed 15 February 2019).

Jeannette, C. and Barbara, N. (2017), *Value Co-Creation and Co-Destruction in the Airbnb Sharing Economy*, *International Journal of Contemporary Hospitality Management*, available at:https://doi.org/https://doi.org/10.1108/IJCHM-09-2016-0492.

Ju, Y., Back, K.-J., Choi, Y. and Lee, J.-S. (2019), "Exploring Airbnb service quality attributes and their asymmetric effects on customer satisfaction", *International Journal of Hospitality Management*, Elsevier, Vol. 77, pp. 342–352.

Kano, N., Seraku, N., Takahashi, F. and Tsuji, S. (1984), "Attractive quality and must-be quality", *The Journal of the Japanese Society for Quality Control*, Vol. 14 No. 2, available at:https://doi.org/https://doi.org/10.20684/quality.14.2_147.

Lai, I.K.W. and Hitchcock, M. (2016), "A comparison of service quality attributes for stand-alone and resort-

based luxury hotels in Macau: 3-Dimensional importance-performance analysis", *Tourism Management*, Elsevier Ltd, Vol. 55, pp. 139–159.

Liang, L.J., Choi, H.C. and Joppe, M. (2018), "Exploring the relationship between satisfaction, trust and switching intention, repurchase intention in the context of Airbnb", *International Journal of Hospitality Management*, Elsevier, Vol. 69 No. September 2016, pp. 41–48.

Lowenstein, M.W. (1995), *Customer Retention: An Integrated Process for Keeping Your Best Customers*, Milwaukee: ASQC Quality Press.

Martilla, J.A. and James, J.C. (1977), "Importance-Performance Analysis", *Journal of Marketing*, available at:https://doi.org/https://doi.org/10.1177%2F002224297704100112.

Martin, C.J. (2016), "The sharing economy: A pathway to sustainability or a nightmarish form of neoliberal capitalism?", *Ecological Economics*, Elsevier B.V., Vol. 121, pp. 149–159.

Moon, H., Miao, L., Hanks, L. and Line, N.D. (2019), "Peer-to-peer interactions: Perspectives of Airbnb guests and hosts", *International Journal of Hospitality Management*, Elsevier, Vol. 77 No. July 2018, pp. 405–414.

Nam, J. and Jeonglyeol, T. (2011), "Foreign travelers ' satisfaction with traditional Korean restaurants", *International Journal of Hospitality Management*, Elsevier Ltd, Vol. 30 No. 4, pp. 982–989.

Pappas, N. (2019), "The complexity of consumer experience formulation in the sharing economy", *International Journal of Hospitality Management*, Elsevier, Vol. 77 No. December 2017, pp. 415–424.

Parasuraman, A., Zeithaml, V.A. and Berry, L.L. (1985), "A Conceptual Model of Service Quality and Its I-mplications for Future Research", *Journal of Marketing*, Vol. 49, pp. 41–50.

Parasuraman, A., Zeithaml, V.A. and Malhotra, A. (2005), "E-S-QUAL: A Multiple-Item Scale for Assessing", *Journal of Service Research*, Vol. 7 No. 3, pp. 213–233.

Phadermrod, B., Crowder, R.M. and Wills, G.B. (2019), "Importance-Performance Analysis based SWOT analysis", *International Journal of Information Management*, Elsevier Ltd, Vol. 44, pp. 194–203.

Priporas, C.-V., Stylos, N., Rahimi, R. and Vedanthachari, L. (2017), "Unraveling the diverse nature of service quality in a sharing economy: A social exchange theory perspective of Airbnb accommodation", *International Journal of Contemporary Hospitality Management*, Vol. 29 No. 9, pp. 2279–2301.

Ranjbari, M., Morales-Alonso, G. and Carrasco-Gallego, R. (2018), "Conceptualizing the Sharing Economy through Presenting a Comprehensive Framework", *Sustainability*, Vol. 10 No. 7, p. 2336.

Ranjbari, M., Morales-Alonso, G., Carrasco-Gallego, R. and Grijalvo, M. (2017), "Business Model Innovation in

Sharing Economy: A Benchmark Approach", *2nd International Conference on New Business Models - Exploring a Changing View on Organizing Value Creation : Developing New Business Models*, Vol. 2511 No. June, pp. 201–212.

Ranjbari, M., Morales-Alonso, G., Shams Esfandabadi, Z. and Carrasco-Gallego, R. (2019), "Sustainability and the Sharing Economy: Modelling the Interconnections", *Dirección y Organización*, Vol. 68, pp. 33–40.

Ranjbari, M., Shams Esfandabadi, Z. and Scagnelli, S.D. (2019), "Sharing Economy Risks: Opportunities or Threats for Insurance Companies? A Case Study on the Iranian Insurance Industry", *The Future of Risk Management, Volume II*, pp. 343–360.

Rauch, A., Collins, M.D., Nale, R.D. and Barr, P.B. (2015), "Measuring service quality in mid-scale hotels", *International Journal of Contemporary Hospitality Management*, Vol. 27 No. 1, pp. 87–106.

Richard, M.D. and Allaway, A.W. (1993), "Service Quality Attributes and Choice Behavior", *Journal of Services Marketing*, Vol. 7 No. 1, pp. 59–68.

Santos, J. (2003), "E-service quality : a model of virtual service quality dimensions", Vol. 13 No. 3, pp. 233–246.

Seth, N., Deshmukh, S.G. and Vrat, P. (2005), *Service Quality Models: A Review*, *International Journal of Quality and Reliability Management*, Vol. 22, available at:https://doi.org/10.1108/02656710510625211.

Smith, A.E. and Humphreys, M.S. (2006), "Evaluation of unsupervised semantic mapping of natural language with Leximancer concept mapping", *Behavior Research Methods*, Vol. 38 No. 2, pp. 262–279.

Sthapit, E. and Jiménez-Barreto, J. (2018), "Exploring tourists' memorable hospitality experiences: An Airbnb perspective", *Tourism Management Perspectives*, Elsevier, Vol. 28 No. February, pp. 83–92.

Sun, S., Zheng, J., Schuckert, M. and Law, R. (2019), "Exploring the Service Quality of Airbnb", *Tourism Analysis*, Vol. 24 No. 4, pp. 531–534.

TCWA. (2019), *Short-Stay Accommodation*, *Tourism Council Western Australia (WA)*.

Tussyadiah, I.P. and Park, S. (2018), "When guests trust hosts for their words: Host description and trust in sharing economy", *Tourism Management*, Elsevier Ltd, Vol. 67, pp. 261–272.

Udo, G.J., Bagchi, K.K. and Kirs, P.J. (2011), "Using SERVQUAL to assess the quality of e-learning experience", *Computers in Human Behavior*, Elsevier Ltd, Vol. 27 No. 3, pp. 1272–1283.

Wang, D. and Nicolau, J.L. (2017), "Price determinants of sharing economy based accommodation rental: A study of listings from 33 cities on Airbnb.com", *International Journal of Hospitality Management*, Elsevier Ltd, Vol. 62, pp. 120–131.

Xie, K. and Mao, Z. (2017), “The impacts of quality and quantity attributes of Airbnb hosts on listing performance”, *International Journal of Contemporary Hospitality Management*, Vol. 29 No. 9, pp. 2240–2260.

Yang, S., Lee, K., Lee, H. and Koo, C. (2018), “In Airbnb we trust : Understanding consumers ’ trust-attachment building mechanisms in the sharing economy”, *International Journal of Hospitality Management*, Elsevier, No. April, pp. 0–1.

Yoo, B. and Naveen, D. (2001), “Developing a Scale to Measure the Perceived Quality of an Internet Shopping Site (SITEQUAL)”, *Quarterly Journal of Electronic Commerce*, Vol. 2 No. 1, pp. 31–47.

Zeithaml, V.A., Parasuraman, A. and Malhotra, A. (2002), “Service quality delivery through web sites: A critical review of extant knowledge”, *Journal of the Academy of Marketing Science*, Vol. 30 No. 4, pp. 362–375.

Zervas, G., Proserpio, D. and Byers, J.W. (2017), “The Rise of the Sharing Economy: Estimating the Impact of Airbnb on the Hotel Industry”, *Journal of Marketing Research*, Vol. 54 No. 5, pp. 687–705.

Zhu, F.X., Wymer, W. and Chen, I. (2002), “IT-based services and service quality in consumer banking services”, Vol. 13 No. 1, pp. 69–90.