Exploring Airbnb service quality attributes and their asymmetric effects on customer satisfaction

Abstract

With the rise of the sharing economy, Airbnb has become the predominant example of the online peer-to-peer accommodation market in the hospitality industry. This study adopts a mixed method approach to systematically and comprehensively capture various service aspects of Airbnb. Two main studies are conducted to identify key service quality (SQ) attributes of Airbnb, verify the dimensionality of the SQ attributes, and examine the effects of these attributes on customer satisfaction (CS). The first qualitative study generated a list of SQ attributes by collecting and analyzing 16,430 online reviews. In the second study, online survey (N = 322) is conducted to identify multiple dimensions of SQ attributes and examine their asymmetric effects on CS using impact-range performance analysis and impact asymmetry analysis. Findings suggest that Airbnb has multiple SQ attributes associated with website, host, and facility that produce distinctive effects on CS.

Keywords: Airbnb, service quality, customer satisfaction, mixed method, impact–range performance analysis, impact asymmetry analysis

1. Introduction

The development of media technology has led to the flourishing of the sharing economy (Belk, 2014; Botsman and Rogers, 2010; Zervas et al., 2017). Through collaborative renting, borrowing, or sharing ownership, the sharing economy refers to peer-to-peer platforms of using underutilized or surplus personal assets to achieve

monetary gains (Zervas et al., 2017). As the Internet and Web 2.0 technologies have expedited and accelerated peer-to-peer transactions online (Ert et al., 2016), more than 2.7 million people in the United States seek business opportunities by sharing goods and services (Roberts, 2016).

The sharing economy has been rapidly growing in the lodging industry by providing low-cost accommodations and a home-like environment, and direct interactions with the local community (Guttentag, 2016). Although Airbnb is the predominant example of peer-to-peer accommodation market, other Airbnb competitors, including HomeAway, HouseTrip, and FlipKey, share the peer-to-peer accommodation market by focusing on vacation rental customers (Guttentag, 2015; Guttentag and Smith, 2017). Founded in 2008, Airbnb is an online intermediary platform that connects hosts and guests by sharing part or all of homes as rental properties for short stays. According to Quinby (2016), with gross bookings of approximately $7.5 billion in 2015, Airbnb has become the third largest online accommodation seller, whereas Expedia and Priceline rank first and second, respectively. Gallagher (2017) states that Airbnb is expected to make a profit of $3.5 billion (versus $100 million in 2016) per year on $8.5 billion (versus $1.7 billion in 2016) in revenues by 2020, projecting 3,400% profit growth. The market valuation of $30 billion ranks Airbnb as the second most valuable online travel agency behind Priceline and ahead of Expedia, TripAdvisor, and Ctrip (Quinby, 2016). Airbnb aims to be the first online travel agency to reach a market valuation of $100 billion. This aim is noteworthy given that the Marriott and Hilton groups have a combined market capitalization of $53 billion (Gallagher, 2017).

Recent studies have investigated this online mechanism of sharing accommodation in terms of the effect of Airbnb businesses on hotels targeting the same geographical market segment (Neeser et al., 2015; Zervas et al., 2017); issues of legislation, regulation, and taxation (Allen and Berg, 2014; Cohen and Sundararajan, 2015; Guttentag, 2015; Koopman et al., 2015); and decision making of consumers (Ert et al., 2016; Guttentag, 2016; Yang and Ahn, 2016). As the role of Airbnb is increasingly important in the hospitality industry, the company's service quality (SQ) attributes are reflected in the hospitality and tourism literature. For example, Airbnb manages a website and a mobile application where hosts can introduce their homes (part or whole) as rental properties, and guests can post reviews to share their stay experiences (Guttentag, 2015). An online review of guest experience is critical to the Airbnb business together with price, amenities, and authenticity because SQ attributes are associated with the online platform (e.g., website design and usability) (Guttentag, 2015). Guttentag and Smith (2017) also assess Airbnb performance expectations relative to hotels using SQ attributes, such as cleanliness, security, authenticity, uniqueness, and price. In addition, Wang and Nicolau (2017) adopt SQ attributes in five domains (host, site and property, facility and service, rental rules, and online review score) to examine Airbnb price determinants.

The aforementioned papers serve as useful references to understand Airbnb SQ attributes. However, SQ attributes of Airbnb vary with the extant studies and are not rigorously developed and validated in the extant literature. Limited research has been conducted to examine the asymmetric effect of SQ attributes on customer satisfaction. An understanding of the asymmetric effect provides researchers with insights into the dynamic nature of attributes that symmetric linear effect cannot identify (Anderson,

Fornell, and Mazvancheryl 2004; Kano, 1984; Mikulić and Prebeźac 2008; Oliver 1997). Understanding of the asymmetrical and nonlinear relationship between attribute–performance and overall satisfaction is lacking, thereby inhibiting Airbnb operators from identifying SQ attributes that affect CS or customer dissatisfaction based on Kano's three-factor theory (Cadotte and Turgeon, 1988; Kano, 1984; Oliver, 1997; Yi and La, 2003).

Therefore, the main purpose of this study is threefold: 1) to identify and validate key SQ attributes of Airbnb, 2) to verify the dimensionality of SQ attributes, and 3) to examine the asymmetric effects of SQ attributes on satisfaction. This study adopted a mixed method with two main studies to systematically and comprehensively capture various service aspects of Airbnb. The first study conducted content analysis and generated a list of SQ attributes by collecting and analyzing qualitative data (online reviews). In the second study, an online survey was conducted to identify and validate SQ attributes and multiple dimensions and examine their asymmetric effects on satisfaction using impact–range performance analysis (IRPA) and impact asymmetry analysis (IAA).

2. Literature review

2.1. Key service quality attributes in Airbnb

Many researchers have attempted to conceptualize SQ as customers' subjective perception and identify key factors that determine what is considered good service. Identifying key SQ attributes is important because customers have certain standards regarding SQ attributes, and their absence negatively influences customers' perceived SQ (Mersha and Adlakha, 1992). Correctly identifying key SQ attributes that customers value

the most is also crucial to increasing CS. In their seminal work on SQ, Parasuraman, Zeithaml, and Berry (1986) articulated five dimensions of SQ (tangibles, reliability, responsiveness, assurance, and empathy) in the SERVQUAL model. Cronin and Taylor (1992) claimed that performance is an important factor when measuring SQ and argued that their performance-based model (SERVPERF) is more reliable in measuring SQ than SERVQUAL. Three dimensions of SERVPERF were further developed later by Brady and Cronin (2001) as interaction quality, physical service environment, and outcome quality.

SQ models have been empirically tested and mortified in many hospitality settings. For example, Saleh and Ryan (1991) implemented SERVQUAL in the hospitality context and identified various dimensions to the original model, which are conviviality, tangibles, reassurance, avoidance of sarcasm, and empathy. Considering the five dimensions of SERVQUAL, Getty and Getty (2003) developed the lodging quality index (LQI) to measure five SQ dimensions in the lodging industry: tangibility, reliability, responsiveness, confidence, and communication.

In the context of e-commerce and online platform, the dimensionality of SQ is fundamentally different from that in offline settings. Several researchers have developed SQ models in the context of online service platforms or web interfaces (e.g., Yoo and Donthu, 2001; Loiacono et al., 2002; Parasuraman et al., 2005). Yoo and Donthu (2001) developed SITEQUAL to measure customers' perception of multiple online SQ attributes: competitive value, clarity of ordering, corporate and brand equity, product uniqueness, product quality assurance, ease of use, aesthetic design, processing speed, and security. Similarly, Loiacono et al. (2002) developed WebQual to measure the following website SQ attributes: information fit-to-task, tailored communications, trust, response time, ease

of understanding, intuitive operations, visual appeal, innovativeness, emotional appeal, consistent image, online completeness, and relative advantage. In their study on e-commerce SQ, Parasuraman et al. (2005) developed E-S-SUQL to measure electronic SQ with four dimensions (efficiency, fulfillment, system availability, and privacy) and E-RecS-QUAL to measure three dimensions (responsiveness, compensation, and contact) of electronic SQ recovery. E-S-QUAL and E-RecS-QUAL are used in this study to measure website responsiveness and efficiency. Table 1 summarizes SQ models applied in online and offline settings.

Insert Table 1 about here

To articulate the SQ attributes of Airbnb, reflecting on its unique service environments of the sharing economy and peer-to-peer marketplace is important. Airbnb's business model is based on utilizing online platform to connect hosts and guests and generating profit by receiving guest service fees. Thus, the Airbnb website acts as a key service platform on which key SQ attributes are simultaneously consumed and assessed by guests. In the process of Airbnb stay, guests would be involved in at least three experiential components: the Airbnb website (or mobile application), host, and accommodation facility. For instance, guests must visit and browse the Airbnb website to determine accommodation alternatives and pay for accommodations. Many services associated with the website, such as interface design, security, ease of use, and responsiveness, would constitute the website SQ of Airbnb. The host plays an important role of interacting with guests during their Airbnb stay (e.g., check-in-and-out process and problem solving). The accommodation facility provided by the host is considered a key service quality dimension in Airbnb as a main product for an overnight stay.

A systematic literature review was conducted to identify potential SQ attributes in the context of the sharing economy and peer-to-peer online market (see Table 2). Several service-related attributes, such as friendship (Yannopoulou, Moufahim, and Bian, 2013), photo of hosts (Ert et al., 2016; Wang and Nicolau, 2017), understanding and caring (Priporas et al., 2017), and hospitality hosting behavior (Lalicic and Weismayer, 2018), are associated with the host. A set of SQ attributes, including facility condition (Ert et al., 2016; Guttentag and Smith, 2017), accommodation experience (Liang, Choi, and Joppe, 2018), and tangibles (Priporas et al., 2017) are associated with accommodation facility. Several SQ attributes such as information quality/trust in intermediary (Jia, Cegieslki, and Zhang, 2014), platform (Zervas, Proserpio, and Byers, 2017), and transaction experience (Liang, Choi, and Joppe, 2018) are associated with the website or platform.

Airbnb SQ has not been studied to capture both online and offline experiences and may possibly have multiple dimensions. However, qualitative investigations are required to understand its uniqueness and apply pre-established SQ models. Empirically testing the dimensions of SQ attributes is critical as well.

Insert Table 2 Here

2.2. Asymmetric effects of SQ attributes on customer satisfaction

Researchers have conceptualized that CS is a feeling of pleasure or disappointment as an outcome of consumers' perceived performance compared with expectation (Kotler et al., 2015; Oliver, 1980). According to the expectation–disconfirmation theory of CS by Oliver (1980), when performance is perceived higher than expectation, a positive disconfirmation occurs; otherwise, the condition results in a negative disconfirmation. Although many studies have investigated key attributes influencing CS in e-commerce

(e.g., Gefen, 2000; Jia et al., 2014; Tan and Sutherland, 2004), limited studies have been conducted in the context of the online peer-to-peer accommodation market. Airbnb features similarities with other e-commerce entities but also contains distinctive characteristics, which produce possible non-traditional SQ attributes. Recent studies have supported the effects of overall SQ (Lalicic and Weismayer, 2018; Priporas et al., 2017) and perceived hedonic and utilitarian values (Lee and Kim, 2018) on CS. However, no study has integrated both online and offline experiences into the Airbnb SQ model and examined the effects of multiple SQ attributes on CS.

The Airbnb literature tends to overlook the asymmetric effects of SQ attributes on satisfaction although the asymmetric effect of these attributes on satisfaction are empirically reported in the business literature (Anderson and Mittal 2000; Mittal, Ross, and Baldasare 1998; Oliver 1997; Streukens and Ruyter 2004). Streukens and Ruyter (2004) advocate that ignoring the asymmetric relationships between attributes and satisfaction may cause model misspecification and poor predictive power.

The asymmetric effects of SQ attributes on satisfaction are evidenced by three-factor theory by which attributes are classified into dissatisfiers, satisfiers, and hybrids (Anderson, Fornell, and Mazvancheryl 2004; Back 2012; Deng 2007; Kano, 1984; Mikulić and Prebeźac 2008; Oliver 1997). To reflect the nature of asymmetric effect, for example, Oliver (1997) conceptualizes attributes as three categories: bivalent satisfiers, monovalent dissatisfiers, and monovalent satisfiers. Bivalent satisfiers (hybrid attributes) trigger satisfaction or dissatisfaction depending on a level of attribute performance. Monovalent dissatisfiers (must-be attributes) cause dissatisfaction when the attributes are not available. However, although the attributes are supplied, satisfaction does not

necessarily occur because individuals take the attributes for granted. Monovalent satisfiers (value-added and delighted attributes) induce a high level of satisfaction when provided and do not cause dissatisfaction even when not available because people do not usually expect the attributes. In line with the abovementioned categories, this study adopts the following asymmetric domains using IRPA and IAA:

- Dissatisfiers and frustrators (must-be attributes) exhibit negative asymmetric effect. Dissatisfiers give rise to dissatisfaction when not provided. Frustrators are considered as severe dissatisfiers that induce a feeling of frustration (an extreme dissatisfaction) if not available. Given that individuals take must-be attributes for granted, the dissatisfiers and frustrators do not cause satisfaction even when the attributes are present.
- Hybrids that display symmetric effect trigger satisfaction when the attributes are supplied but evoke dissatisfaction when not present.
- Satisfiers and delighters (value-added attributes) generate a positive asymmetric effect. Satisfiers lead to satisfaction when the attributes are given. Delighters are deemed as a high level of satisfiers; thus, individuals are delighted when the attributes are available. As satisfiers and delighters are not generally expected, the attributes do not induce dissatisfaction even when not available.

Furthermore, as Back (2012) stressed the importance of assessment of the relationship between the attribute–performance scores and three categories for developing CS (i.e., dissatisfier, satisfier, and hybrids), investigating the role of each category of SQ attributes is critical. For example, an attribute categorized as a frustrator (e.g., ease of navigation) would have a greater influence on customer dissatisfaction in low-level rather than high-level performance issues.

3. Study 1

To articulate SQ attributes of Airbnb and examine its asymmetric effect on CS, this study adopted a mixed method using both qualitative and quantitative approaches. In

Study 1, qualitative data (online reviews) were collected and analyzed to identify key SQ attributes and customers' emotional responses to them.

3.1. Methodology of Study 1

3.1.1. Review data collection

Four major US cities with the most Airbnb property rental listings were selected as follows: Miami, New York, San Francisco, and Chicago (Airbnb.com, 2017). ParseHub was used to scrap data from the Airbnb webpages of the four cities from January 10 to 13, 2017. This study included Airbnb listings with price range between $20 and $150 (based on the rate on February 1, 2017) and with 100 and more reviews. The set of listings that appeared first when selecting one of four cities was collected because the Airbnb website automatically updates as users change geographic location displayed on the map. A total of 16,430 online reviews containing more than 800,000 words were collected and stored in TXT format.

3.1.2. Content analysis of online reviews

Consumer feedback, including online reviews, have been utilized as a source for measuring company performance and understanding customer needs and wants (Yang and Fang, 2004). Xiang et al. (2015) also suggested that utilizing big data and text analysis provides an improved understanding of guest experience and CS in hospitality. The collected raw text data were examined, and the frequency and co-occurrence of words were analyzed using QDA Miner 5.

3.1.3. Sentiment analysis

Negative, neutral, and positive guest emotions associated with SQ attributes were examined using SentiStrength (see Appendix). SentiStrength is a dual sentiment (positive

and negative) strength scoring system that produces an optimal level of near-human accuracy when analyzing general short social web texts (Thelwall, 2013). Nielsen (2011) found that SentiStrength has the overall best performance over other software programs in terms of the correlation between the results of sentiment analysis conducted by computerized programs and humans hired through Amazon Mechanical Turk (MTurk).

3.2. Findings of Study 1

A total of 16,430 reviews from 103 Airbnb listings in four major cities were collected. The average number of reviews per listing was 160, and the average number of words per review was 53. As shown in Table 3, San Francisco had the largest number of listings, whereas Miami had the smallest. Private room was the most common property type, followed by entire home/house. The overall ratings in Airbnb reviews had a mean score of 4.7 out of 5.0, which is highly positive.

Insert Table 3 about here

3.2.1. Content analysis

To conduct content analysis, the collected review data were refined first. For example, hosts' names were frequently mentioned in reviews, and actual names were replaced with "host" (single name) or "hosts" (two or more names). Approximately 1,300 reviews with only one word or written in a non-English language were removed during analysis.

Table 4 displays the top 30 most frequently appearing words in Airbnb reviews. The most frequently appearing word was "host" (17,856; 16.54%). Its plural form, "hosts" (2,520; 2.33%), also appeared frequently. The next set of most frequently appearing words was associated with accommodation facility: "place" (7,616; 7.05%), "room"

(5,842; 5.41%), “clean” (5,230; 4.84%), “location” (3,797; 3.52%), “comfortable” (3,302; 3.06%), and “apartment” (3,266; 3.02%). However, no word was associated with website SQ.

Insert Table 4 about here

As shown in Figure 1, “host” had a relatively high co-occurrence with almost every word that appeared in the frequency analysis, implying that “host” is at the center of many other important SQ attributes. Not only tangible SQ attributes but also interpersonal experiences with “host” is important in the context of peer-to-peer accommodation. Some guest reviews also served as a thank you letter, as shown in the following example:

> *Hi [host], Thank you for your caring and sharing during my stay with you. I arrived tired and jetlagged, not really in the mood for exploring San Francisco. Instead we talked a lot and I got to know the neighborhood [.] For me, traveling is more about meeting people than seeing the sights. I’m happy I met you.*

Co-occurrence analysis results show that “host” often appeared with adjectives describing the host’s personality and attitude: friendly, helpful, welcoming, and accommodating. A group of words was also associated with accommodation experience, and these words included “room,” “clean,” “comfortable,” and “location.” Frequently used in the form of a comfortable bed, a clean room and bathroom, walking distance to restaurants and airport, and beautiful house, facility SQ attributes were also considered important for Airbnb guests. “Neighborhood,” “quiet,” and “safe” had high frequency and high co-occurrence among these words. Perceptions of quietness and safety of

neighborhood (or community) were considered important SQ attributes for Airbnb guests.

As a result of topic analysis using WordStat 7, this study found four overarching topics (each has two sub-topics) that encompass keywords identified in frequency and co-occurrence analysis: “host” (personality and attitude), “room/house” (clean bathroom and comfortable bed), “location” (accessibility to public transportation and the property), and “neighborhood” (quiet and safe neighborhood) (see Table 4).

Insert Figure 1 about here

3.2.2. Sentiment analysis

To analyze Airbnb guests’ emotions expressed in their reviews, this study conducted sentiment analysis. The strength of positive (scale of 1 to 5) and negative (scale of −1 to −5) sentiment was estimated. Positive (or negative) content with the highest sentiment score was retained as the main sentiment of the sentence. The overall sentiment of review was determined by adding both positive and negative sentiment scores (Thelwall, 2013). The majority of reviews (13,802, 91.3%) had a positive overall sentiment score. Only 927 (6.1%) and 380 reviews (2.5%) had neutral and negative overall sentiment scores, respectively.

To identify important SQ attributes, critical incident analysis, an effective investigation tool for examining customer’s perception of SQ (Yang, Jun, and Peterson, 2004), was performed. This study investigated two extreme reviews: a review with the highest positive sentiment score (215) and a review with the lowest negative sentiment score (−202) (Table 5). Although these two reviews are not representative of all review

data, their contents could provide an insight to identify SQ attributes in satisfying or dissatisfying situations.

Important SQ attributes were identified in the positive review. For example, “host” (e.g., host name, they, and she) was mentioned 10 times, complementing the host(s) for being kind, responsive, and helpful. Attributes related to room (e.g., clean bathroom, comfortable beds, and physical appearance of the house) were mentioned positively. Accessibility to public transportation (location) and nice neighborhood also contributed to positive sentiment. However, in the positive critical incident review, accessibility to the property and quiet neighborhood were not mentioned.

Similar to most negative reviews, host-related words (host, hosts, or name of host) were not mentioned once. The guest complained about the absence of personal interaction with the host(s). Many SQ attributes appeared in a negative manner. For example, the guest mentioned the uncomfortable feeling of having an unlocked door. The guest criticized the level of cleanliness of the room/bathroom and expressed an unfavorable impression of the neighborhood. In the negative critical incident review, location and quiet neighborhood were not mentioned.

Insert Table 5 about here

4. Study 2

Building upon the findings of Study 1, Study 2 used a quantitative approach (online survey) to evaluate and compare customers’ expectation and actual performance of Airbnb and its operators. The main purpose of the quantitative study is to verify the

dimensionality of SQ attributes and examine the asymmetric effects of SQ attributes on satisfaction.

4.1. Methodology of Study 2

4.1.1. Questionnaire development

To conduct the online survey, measurement items of SQ and CS of Airbnb were developed. The initial set of Airbnb SQ attributes were generated from Study 1 based on results of content analysis of online reviews. Based on the results of qualitative study (Tables 4 and 5), several items were derived by focusing on host, room/house, location, and neighborhood. In addition, web quality attributes were added to assess the customers' perception about efficiency, system availability, and other electronic service-related quality attributes from the analysis of online reviews. Then, those attributes were compared with the current measurements of SQ studies in various scales including SERVQUAL (Parasuraman et al., 1985), SITEQUAL (Yoo and Donthu, 2001), WebQual (Loiacono et al., 2002), and E-S-QUAL (Parasuraman et al., 2005). As a result of comparison between qualitative results (Study 1) and critical reviews of current SQ measurements, 35 items were generated to fully understand the underlying structure of Airbnb SQ. In addition, CS was measured with three items (i.e., overall SQ perception, guests' feelings toward provided service, and intention to use the service in the future) derived from Oliver (1980). A five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) was used to measure both SQ and CS.

3.2.2. Pilot test

An online survey was constructed using Qualtrics. To verify the comprehensibility of instruction, survey flow, and validity of measurement items, a pilot test was conducted

with 43 respondents who stayed at one of the Airbnb property rentals. Based on the pilot test findings, the survey instruction was clarified, and the wording of ambiguous items was refined. Eight items were removed owing to overlapped meanings, thereby leaving 27 Airbnb SQ items.

4.1.2. Data collection

The survey was distributed using an online crowdsourcing platform, MTurk, in March 2017. Despite the possible limitations of using MTurk as a data collection method, recent studies have supported that data obtained from MTurk are no better or worse than other online survey platforms using convenient sampling methods and can be superior to the data collected from single convenient organization (Landers and Behrend, 2015). The online survey link was posted on MTurk and each participant was paid US$.75 upon the completion of survey. A total of 322 responses were collected from those 1) who reside in the US and Canada, 2) who meet the qualification requirement of human intelligence task approval rate greater than 95%, and 3) who stayed in Airbnb property rentals within the last three-month period. The survey data were screened for missing values and normal distribution. An exploratory factor analysis (EFA) was conducted to examine the dimensionality of SQ. This study then used IRPA and IAA to investigate the asymmetric effects of SQ attributes on satisfaction.

4.2. Findings of Study 2

4.2.1. Survey participants

A similar proportion of male (49.4%) and female (48.8%) respondents participated in the survey (Table 6). Half of the respondents belonged to the 18–29 age group, followed

by 30–49 (43.8%), and 50–64 (5.9%). The majority of the respondents were identified as having white ethnicity (72.7%) and college (28.3%) or university education (45.7%). Income level was diversely distributed. Similar to the findings of Study 1, the most common room type of Airbnb stay was private room (48.1%). The median rate for Airbnb stay was $61–$80, which was also similar to the mean of Airbnb listings ($66) found in Study 1. Forty-nine percent of the respondents stayed in an Airbnb property two to four times. Thirty-five percent used Airbnb once a quarter, whereas thirty-two percent used Airbnb only when needed. Most respondents used Airbnb for leisure travel purposes (81.7%).

Insert Table 6 about here

4.2.2. Exploratory factor analysis

An EFA using principle axis factoring with Promax rotation was conducted to examine the dimensionality of SQ attributes of Airbnb (see Table 7). When conducting IRPA and IAA, the number of independent variables must be reduced to avoid multicollinearity issue and complexity of correlations between variables (Back, 2012). After deleting seven items owing to low factor-loading (<0.40) and cross-loading issues, EFA results suggest 20 SQ items with four dimensions: host service quality, web responsiveness quality, web efficiency quality, and facility service quality (FSQ). All four factors showed good reliability (Cronbach's alpha = 0.814–0.899).

Insert Table 7 about here

4.2.3. Result of asymmetric effects of SQ attributes on CS

IRPA and IAA were conducted to investigate the asymmetric effects of SQ attributes on satisfaction. The first step of IRPA is penalty–reward contrast analysis, which

identifies penalty indices (PI) and reward indices (RI) with a multiple regression analysis using two dummy variables (Brandt, 1987). The first dummy variable was created by coding the lowest attributes performance score (APS) as 1 and the other ratings as 0. The second dummy variable was generated by coding the highest APS as 1 and the other ratings as 0. Two dummy variables were then regressed on CS to generate PI and RI. PI refers to the incremental decrease in CS when the APS is low, and RI indicates incremental increase in CS when APS is high (Back, 2012).

The second step of IRPA is calculating impact asymmetry (IA) using the absolute value of PI and RI as well as the sum of two or attribute's range of effect on CS (RICS) for each attribute. IA index was then calculated to compare an attribute's satisfaction-generating potential (SGP) to its dissatisfaction-generating potential (DGP) (Back, 2012). The equations for calculating SGP, DGP, and IA index for SQ attribute i are as follows (Mikulic and Prebezac, 2008, p. 566):

$$\mathrm{SGP_i} = \frac{\mathrm{RI}}{\mathrm{RICS_i}}$$

$$\mathrm{DGP_i} = \frac{|\mathrm{RI}|}{\mathrm{RICS_i}}$$

$$\mathrm{IA_i\ index} = \mathrm{SPG_i} - \mathrm{DGP_i}$$

IA was then used as a criterion to categorize SQ attributes into five different asymmetric zones based on the cut-off point suggested by Mikulic and Prebezac (2008): frustrators (IA ≤ −0.7), dissatisfiers (−0.7 < IA ≤ − 0.4), hybrids (− 0.4 < IA < 0.4), satisfiers (0.4 ≤ IA < 0.7), and delighters (IA ≥ 0.7).

Insert Table 8 here

Findings in Table 8 show different attribute categories in each factor. In facility service quality, safe neighborhood (0.63), clean bathroom (0.62), and quiet neighborhood (0.33) were identified as satisfiers. Comfortable bed (−0.67) and visual appeal (−0.60) were categorized as dissatisfiers. In host service quality, welcoming (0.37) and best interests at heart (0.29) were considered as satisfiers. Helpful host (−0.68) and home-feeling (−0.39) were identified as dissatisfiers. Friendliness (−0.83) was categorized as a frustrator. Dissatifiers and frustrators were dominant in web efficiency quality. Fast page loading (−0.83) and being easy to find (−0.75) were identified as frustrators. Available listings (−0.65), being simple to use (−0.47), and having well-organized information (−0.43) were categorized as dissatisfiers. Web responsiveness quality was also strongly characterized as a dissatisfier and frustrator. Available live person (−0.82) was a frustrator, whereas promised refund process (−0.57), compensation (−0.38), telephone number (−0.34), and online representative (−0.27) were identified as dissatisfiers.

4.2.4. Result of IRPA

An SQ attribute with higher RICS and lower APS suggests that improvement priority should be given to the attribute (Mikulic and Prebezac, 2008). Figure 4 presents the IRPA grid, which was generated by using the mean values of attribute–performance score (APS) as the y-axis and RICS scores as the x-axis. Four grids were created to identify the relative position of selected attributes for each factor.

For facility service quality, visually appealing room/house had the most significant effect on CS (RICS = 1.32), followed by comfortable bed (RICS = 1.00). For host service quality, helpful host (RICS = 1.43) and friendly host (RICS = 1.15) were most powerful. In terms of web efficiency quality, being easy to find (RICS = 1.89) and available listings

(RICS = 1.85) were strong. For web responsiveness quality, refund process was most significant (RICS = 1.89).

5. Discussion

5.1. Theoretical implications

The rapid growth of Airbnb represents the increasing popularity of the sharing economy in hospitality businesses. To articulate the key SQ attributes of Airbnb and examine its asymmetric effect on CS, this research conducted two main studies using a mixed method approach. The findings provide meaningful theoretical contributions to the Airbnb literature. For example, to identify and validate Airbnb SQ attributes, this study conducted thorough reviews of literature and content analysis with 16,430 online reviews, followed by online survey. Consequently, this study articulated Airbnb SQ attributes in the dimensions of facility service quality, host service quality, web efficiency quality, and web responsiveness quality. Although the prior Airbnb literature used quality attributes to examine Airbnb-related phenomena, previous studies (e.g., Ert et al., 2016; Guttentag, 2015; Guttentag and Smith, 2017; Wang and Nicolau, 2017) adopted the attributes from the literature and used them in varying degrees of numbers and dimensions of quality attributes because no previous research had developed and validated the attribute scale.

Following the comprehensive procedures of identifying Airbnb SQ attributes, this study presents the detailed list of SQ attributes and validates them in the domains of facility, host, web efficiency, and web responsiveness. This study identified the SQ attributes of web efficiency and responsiveness that were not explored in the prior

literature. The findings provide empirical evidence supporting that website functions, design, usability, and responsiveness are important SQ attributes for Airbnb guests (Jia et al., 2014; Liang et al., 2018; Zervas et al., 2017). In accordance with previous studies on the sharing economy and peer-to-peer market, this study found that Airbnb guests also look for traditional SQ attributes associated with tangibles (Prioras et al., 2017; Wang and Nicolau, 2017) and hosts (Ert et al., 2016; Yannopoulou et al., 2013). By capturing both online and offline service environments, the identified SQ attributes reflect pre-trip and on-site experiences. As the validated measures of SQ attributes are fundamental to Airbnb empirical research, the current findings would be instrumental in facilitating future Airbnb quantitative research, thereby contributing to the quantity and quality of Airbnb literature.

In addition, this study examined the asymmetric effects of SQ attributes on CS using IRPA and IAA. A popular way of assessing the effects of SQ attributes on CS is a symmetric linear relationship in empirical research. The symmetric linear relationships allow scholars to verify if the relationships show statistical significance in either a positive or negative direction. If the relationships are found to be statistically non-significant, attributes are interpreted as not affecting satisfaction without considering asymmetrical relationships. An understanding of the asymmetric relationships enables researchers to comprehend the dynamic effect of attributes on satisfaction which the symmetrical linear relationships cannot recognize. An assessment of the asymmetric effect in this study enables researchers to identify negative asymmetric (frustrators, dissatisfiers), positive asymmetric (satisfiers, delighters), or symmetric (hybrids) effects of SQ attributes on CS. For example, 10 attributes in the dimensions of web efficiency

and web responsiveness quality were all found to be either dissatisfiers or frustrators, exhibiting a negative asymmetric effect. As dissatisfiers and frustrators are considered as must-have attributes, the attributes cause dissatisfaction when not properly managed. However, even when the attributes are available, customers are not satisfied because people take them for granted. Such a dynamic nature of SQ attributes on CS would not be detected when a symmetrical linear effect is considered. The asymmetric effect of attributes on CS provides an expanded insight into the dynamic nature of attributes. With a method of IRPA and IAA, the current study offers unique findings not discussed and explored in the extant Airbnb literature and contributes to the literature by recognizing the dynamic effect of attributes on CS.

5.2. Practical implications

An identification of the dynamic effect of SQ attributes on CS assists industry practitioners concerned in prioritizing attributes for Airbnb strategic management. The results of Study 1 were further elaborated by the results of Study 2. For example, "host" was the most frequently used word based on the text analysis and co-occurrence study, and host's friendliness was regarded as a frustrator which had the highest effect in terms of determining customer dissatisfaction when it was absent. The result of sentiment analysis was further supported by the result of IRPA that a safe and quiet neighborhood had both highest and negative sentiment review scores, whereas those items were clearly categorized in satisfiers. Thus, IRPA and IPA results provide a more meaningful guideline for practitioners in prioritizing management strategies.

Findings in Table 8 indicate that SQ attributes exhibit either negative asymmetric (dissatisfiers and frustrators) or positive asymmetric effect (satisfiers) on CS. Satisfiers

(value-added attributes) make customers delighted and do not necessarily lead to dissatisfaction because individuals do not usually expect them. On the other hand, dissatisfiers and frustrators are considered as must-have attributes and cause dissatisfaction when the attributes are not properly managed. However, they do not induce satisfaction because people take them for granted. If the quality of must-have attributes is poorly monitored and maintained, customer experience with Airbnb is seriously ruined. An in-depth management of must-be attributes is fundamental to the success of Airbnb. Therefore, dissatisfiers and frustrators should be prioritized over satisfiers for the strategic management of Airbnb SQ attributes.

For example, Table 8 shows that the respondents perceived “comfortable bed” and “visually appealing room/house” as dissatisfiers with high RICS score. The host should carefully monitor those attributes with relatively high RICS and low APS scores. Being a dissatisfier, it could be destructive for the host’s reputation depending on their perceived performance score. Moreover, Airbnb hosts should not neglect the importance of “easy web navigation” and “fast loading,” which were categorized as frustrators. Their RICS scores were relatively higher than those for other attributes, so Airbnb hosts should carefully monitor the performance ratings for these items.

This study also found that most SQ attributes associated with the website were categorized as either dissatisfier or frustrator. Airbnb guests would be easily dissatisfied when confronted with technical website issues. Thus, Airbnb should carefully monitor that all must-have attributes of website meet their users’ expectations. In the process of service recovery, providing Airbnb users with easy access to the information on how to handle booking errors or resolve technical problems is also important. Although Airbnb

currently operates its Help Center on the website, multiple clicks and search processes are necessary to determine relevant information. As a strategy of the instant feedback system, the employment of live chat functions on the website would increase guests' convenience and a sense of social presence when exploring the website. To facilitate users' immediate communication with customer service representatives, providing diverse contact methods (through phone, email, and website) is also necessary.

This study found that one of the must-have attributes is related to refunds, but the refund process on the Airbnb website is sometimes not performed as promised (Elliott, 2017). As individual hosts' refund and cancellation policies may vary, Airbnb should set a bottom line (e.g., minimum refund amount and cancellation conditions) to prevent possible conflicts between guest and host.

Furthermore, the result of this study provides insightful information for the Airbnb management team. Although standardizing the conditions of the entire Airbnb properties (e.g., room type, size, location, and neighborhood) would be difficult, controlling the must-have attributes of facility, which are bed conditions and visual appearance of accommodation, is important. Given that SQ attributes are determined by individuals' subjective expectations (Parasuraman et al., 1985), the availability of information is important to set expectations. Airbnb should help their guests determine sufficient information on bed condition and visual appeal in the user rating system. Airbnb should also develop a system to carefully monitor property listings and online reviews to filter fake information on facility and host (e.g., different room photo and extra cost not mentioned).

Given the importance of personal transactions between hosts and guests, Airbnb should inform hosts that their attitude (e.g., being friendly and helpful) and home-like atmosphere are must-have SQ attributes for Airbnb guests. The important role of the host should be emphasized by providing an orientation handbook for host registration or sending out reminder messages when posting a property list.

5.3. Limitations and suggestions for future research

Although this study provides meaningful information to broaden the understanding of Airbnb SQ attributes, the findings are mainly based on the Airbnb market in North America (US and Canada). The qualitative data were driven from four destinations with the most number of Airbnb listings, namely, Miami, New York, San Francisco, and Chicago as convenience sampling (Airbnb.com, 2017). Given that Airbnb has been successful in the global market, future research should investigate how local culture and community influence host–guest relationships and guests' evaluation of SQ attributes. Online reviews collected in this study were biased toward positive evaluation. As some guests consider writing a review as an act of personal interaction (e.g., sending a thank you letter or message to friends), the close relationship between host and guest can be one possible reason behind overly positive Airbnb review scores. Others may point out the issue of fake reviews written or supported by hosts (Christie, 2017). However, this study cannot determine the authenticity of reviews. Identifying the mechanism to detect fake reviews or postings would be an interesting future research topic. A short data collection period of the online survey is a limitation of this study. Future study should collect data throughout the year to offset potential seasonality effects and examine seasonal

differences regarding guests' perception of SQ attributes. Given that Airbnb attempts to penetrate a business travel market (Vidalon and Denis, 2017), comparing Airbnb SQ attributes between leisure and business travelers would be interesting.

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Table 1
Overview of service quality models

Offline				
Service quality model	SERVQUAL (Parasuraman et al., 1988)	SERVPERF (Cronin & Taylor, 1992)	SERVQUAL in hospitality industry (Saleh & Ryan, 1991)	LQI (Getty & Getty, 2003)
Dimensions	• Tangibles • Responsiveness • Reliability • Assurance • Empathy	• Physical service environment quality • Interaction quality • Outcome quality	• Tangibles • Reassurance • Avoiding sarcasm • Empathy • Conviviality	• Tangibility • Responsiveness • Confidence • Communication • Reliability
Online				
Service quality model	SITEQUAL (Yoo & Donthu, 2001)	WebQual (Watson & Goodhue, 2002)	E-S-QUAL (Parasuraman et al., 2005)	E-RecS-QUAL (Parasuraman et al., 2005)
Dimensions	• Competitive value • Product quality assurance • Clarity of ordering • Ease of use • Aesthetic design • Processing speed • Security • Corporate and brand equity • Product uniqueness	• Online completeness • Response time • Trust • Tailored communications • Ease of understanding • Intuitive operations • Visual appeal • Innovativeness • Emotional appeal • Consistent image • Information fit-to-task • Relative advantage	• Efficiency • Fulfillment • System availability • Privacy	• Responsiveness • Compensation • Contact

Table 2
Overview of service attributes that appeared in previous studies on sharing economy and peer-to-peer (P2P) marketplace

Author(s)	Year Published	Research Setting	Potential Service-related Attributes	Implications
Yannopoulou, Moufahim, & Bian	2013	Couchsurfing and Airbnb	Diversity, meaningful interpersonal exchange, friendship, access to private space, and authenticity	Identifying identity construction and visual representation of user-generated brands
Jia, Cegieslki, & Zhang	2014	Taobao (P2P e-commerce)	Trust in intermediary and online sellers, seller performance, information quality, and service quality	Information quality, service quality → trust and CS
Guttentag	2015	Airbnb	Disruptive innovation theory (more people trying because it is new)	Now has some impact on an existing market, but will not displace the market
Ert, Fleischer, & Magen	2016	Airbnb	Visual-based trust (photo of hosts), facility condition (accommodation size, type, and location)	Visual-based trust → purchase decision
Yang & Ahn	2016	Airbnb	Economic benefit, enjoyment, reputation, sustainability, regulation policy, and security	Enjoyment and reputation → significant antecedents of attitudes toward Airbnb
Guttentag & Smith	2017	Airbnb	Cleanliness, security, authenticity, uniqueness, and price	SQ → performance expectations
Priporas, Stylos, Vedanthachari, & Santiwatana	2017	Airbnb	Assurance, tangibles, convenience, understanding, and caring	SQ → CS and loyalty
Wang & Nicolau	2017	Airbnb	Host, site, property, facility and service, rental rules, and online review score	SQ as rental price determinants
Zervas, Proserpio, & Byers	2017	Airbnb	Trust, platform (system), benefit, and cost (price)	P2P market → long-term effect on diversity of goods offered and consumed
Lee & Kim	2018	Airbnb	Hedonic value, utilitarian value	Hedonic value and utilitarian value → CS and loyalty
Liang, Choi, & Joppe	2018	Airbnb	Transaction experience, accommodation experience	Transaction and accommodation experiences construct satisfaction, which lead to trust in Airbnb and host.

Lalicic & Weismayer	2018	Airbnb	Hospitality hosting behavior, service quality, perceived risk reduction, social authentic appeal, and economic appeal	SQ, social, and authentic experiences → loyalty

Table3
Statistics of collected Airbnb reviews

	# of Listings	%	# of Reviews	%	Property Type		
					Private Room	Entire Home/APT	Shared Room
San Francisco	34	33%	5,974	36%	24	6	4
New York	26	25%	4,009	24%	21	3	2
Chicago	23	22%	3,358	20%	12	11	0
Miami	20	19%	3,088	19%	14	4	2
Total	103	100%	16,430	100%	71	24	8

	Price	Overall Rating	Detailed Rating					
			Accuracy	Communication	Cleanliness	Location	Check In	Value
Minimum	$24	4.0	4.5	4.0	3.5	3.5	4.5	4.0
Maximum	$133	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Mean	$66	4.7	4.8	4.9	4.7	4.6	4.9	4.7
Median	$59	4.5	5.0	5.0	5.0	4.5	5.0	4.5
Mode	$55	5.0	5.0	5.0	5.0	4.5	5.0	4.5

Table 4
Top 30 most frequently appearing words

Word	Frequency	% Shown
Host	17,856	16.54%
Great	8,642	8.00%
Stay	7,624	7.06%
Place	7,616	7.05%
Room	5,842	5.41%
Clean	5,230	4.84%
Nice	4,987	4.62%
Location	3,797	3.52%
Comfortable	3,302	3.06%
Apartment	3,266	3.02%
Time	2,861	2.65%
Good	2,704	2.50%
House	2,701	2.50%
Recommend	2,600	2.41%
Hosts	2,520	2.33%
Easy	2,337	2.16%
Home	2,280	2.11%
Friendly	2,144	1.99%
Perfect	2,079	1.93%
Close	2,056	1.90%
Helpful	2,053	1.90%
Neighborhood	1,954	1.81%
Experience	1,919	1.78%
Night	1,849	1.71%
Bed	1,756	1.63%
Staying	1,665	1.54%
City	1,536	1.42%
Area	1,415	1.31%
Welcoming	1,398	1.29%
Total		100.00%

Table 5
Results of critical incident analysis

Review with the Highest Positive Sentiment Score		
Topic	Identified Attributes	Contents
Host	Personality of host(s)	[Host] was great
		They were kind
	Attitude of host(s)	Easy to communicate with
		Helped accommodate
		Available to help with anything
Room/House	Clean bathroom	Bathroom is super clean and nice
	Comfortable bed	Beds were very comfortable
Location	Accessibility to public transportation	Transit is nearby
		Not far from the airport
	Accessibility to the property	None
Neighborhood	Quiet neighborhood	None
	Safe neighborhood	Neighborhood is nice
Review with the Lowest Negative Sentiment Score		
Topic	Identified Attributes	Contents
Host	Personality of host(s)	None
	Attitude of host(s)	Dislike the 100% anonymous stay
		This place is only for making money
Room/House	Clean room	Room was dirty
		Bed smelling carpets
		Chair with […] stains
	Clean bathroom	Bathroom disgusting […], smells terrible
Location	Accessibility to public transportation	None
	Accessibility to the property	None
Neighborhood	Quiet neighborhood	None
	Safe neighborhood	Neighborhood made a very bad impression

Table 6
Profile of respondents (N = 322)

	Frequency	Percentage
Gender		
Male	159	49.4
Female	157	48.8
Missing	6	1.9
Age		
18–29	161	50.0
30–49	141	43.8
50–64	19	5.9
65<	1	0.3
Education		
Some high school	1	0.3
High school	17	5.3
2-year college	91	28.3
4-year university	147	45.7
Postgraduate degree	66	20.5
Ethnicity		
African American	29	9.0
Asian	34	10.6
Hispanic	20	6.2
White	234	72.7
Other	4	1.2
Missing	1	0.3
Income		
Under $25,000	72	22.4
$25,000–$34,999	47	14.6
$35,000–$49,999	65	20.2
$50,000–$74,999	71	22.0
$75,000–$99,999	40	12.4
More than $100,000	27	8.4
Number of previous Airbnb stays		
1	68	21.1
2–4	159	49.4
5–7	61	18.9
8–10	15	4.7
10<	19	5.9
Frequency of Airbnb stays		
Every week	2	0.6
Every other week	12	3.7
Once a month	35	10.9
Once a quarter	113	35.1
Once a year	57	17.7
Only when I need it	103	32.0
Room Type		

Shared room	18	5.6
Private room	155	48.1
Entire house	149	46.3
Rate		
Less than $20	8	2.5
$21–$40	34	10.6
$41–$60	67	20.8
$61–$80	59	18.3
$81–$100	70	21.7
More than $100	84	26.1
Purpose of stay		
Business	52	16.1
Leisure	263	81.7
Other	7	2.2

Table 7
Results of exploratory factor analysis

	Factor loading	Eigen value	% Variance explained	Cronbach's alpha	Factor mean
Factor 1: Host service quality		8.353	39.732	0.899	4.040
Host is helpful	0.919				
Host is welcoming	0.910				
Host is friendly	0.892				
Host has your best interests at heart	0.625				
Host makes me feel like I am home	0.567				
Factor 2: Web responsiveness quality		1.983	7.934	0.867	3.865
It offers the ability to speak to a live person if there is a problem	0.907				
This site has a customer service representative available online	0.781				
This site provides a telephone number to reach the company	0.725				
This site compensates me for problems it creates	0.705				
It processes refunds as promised	0.553				
Factor 3: Web efficiency quality		1.516	5.356	0.853	4.188
This site is simple to use	0.848				
It loads its pages fast	0.761				
Information at this site is well organized	0.697				
This site makes it easy to find what I need	0.691				
Listings provided by this site are actually available	0.625				
Factor 4: Facility service quality		1.364	4.819	0.814	4.196
Room/house is located in a quiet neighborhood	0.807				
Bed is comfortable	0.733				
Room/house is located in a safe neighborhood	0.635				
Room/house provided by host is visually appealing	0.617				
Host provides a clean bathroom	0.418				
Total variance explained			57.841		

Note: KMO measure of sampling adequacy = 0.915; Bartlett's test of sphericity = 0.000

Table 8
Results of IRPA and IAA

	RI	PI	RICS	SGP	DGP	IA	Factor	APS
Facility Service Quality (R^2 = 0.35)								
Host provides a clean bathroom	**0.51**	0.12	0.63	0.81	0.19	0.62	Satisfier	4.30
Bed is comfortable	**0.17**	**-0.84**	1.00	0.17	0.83	-0.67	Dissatisfier	3.93
Room/house provided by host are visually appealing	**0.26**	**-1.06**	1.32	0.20	0.80	-0.60	Dissatisfier	3.98
Room/house is located in a quiet neighborhood	**0.24**	-0.12	0.36	0.67	0.33	0.33	Satisfier	3.83
Room/house is located in a safe neighborhood	**0.24**	0.05	0.29	0.81	0.19	0.63	Satisfier	4.17
Host Service Quality (R^2 = 0.42)								
Host has your best interests at heart	**0.20**	0.11	0.31	0.65	0.35	0.29	Satisfier	4.05
Host makes me feel like I am home	0.10	**0.23**	0.33	0.31	0.69	-0.39	Dissatisfier	4.04
Host is friendly	0.10	**-1.05**	1.15	0.09	0.91	-0.83	Frustrator	4.32
Host is welcoming	0.54	-0.25	0.79	0.68	0.32	0.37	Satisfier	4.26
Host is helpful	0.23	-1.20	1.43	0.16	0.84	-0.68	Dissatisfier	4.30
Web Efficiency Quality (R^2 = 0.33)								
This site makes it easy to find what I need	**0.24**	**-1.65**	1.89	0.13	0.87	-0.75	Frustrator	4.29
Information at this site is well organized	**0.25**	**-0.62**	0.87	0.29	0.71	-0.43	Dissatisfier	4.17
It loads its pages fast	**0.13**	**-1.42**	1.55	0.09	0.91	-0.83	Frustrator	4.13
This site is simple to use	0.18	**-0.49**	0.66	0.27	0.73	-0.47	Dissatisfier	4.18
Listings provided by this site are actually available	**0.32**	**-1.53**	1.85	0.17	0.83	-0.65	Dissatisfier	4.17
Web Responsiveness Quality (R^2 = 0.16)								
This site compensates me for problems it creates	0.10	**-0.23**	0.33	0.31	0.69	-0.38	Dissatisfier	3.65
It processes refunds as promised	**0.41**	**-1.48**	1.89	0.22	0.78	-0.57	Dissatisfier	3.91
This site provides a telephone number to reach the company	**0.18**	**-0.36**	0.53	0.33	0.67	-0.34	Dissatisfier	3.95
This site has a customer service representative available online	0.16	**-0.28**	0.44	0.36	0.64	-0.27	Dissatisfier	3.89
It offers the ability to speak to a live person if there is a problem	0.05	**0.54**	0.59	0.09	0.91	-0.83	Frustrator	3.92

Bold values: Unstandardized coefficients were significant at $p<0.05$; RI: reward index; PI: penalty index; RICS: range of impact on customer satisfaction; SGP: satisfaction-generating potential; DGP: dissatisfaction-generating potential; IA: impact–asymmetry; APS: attribute-performance score

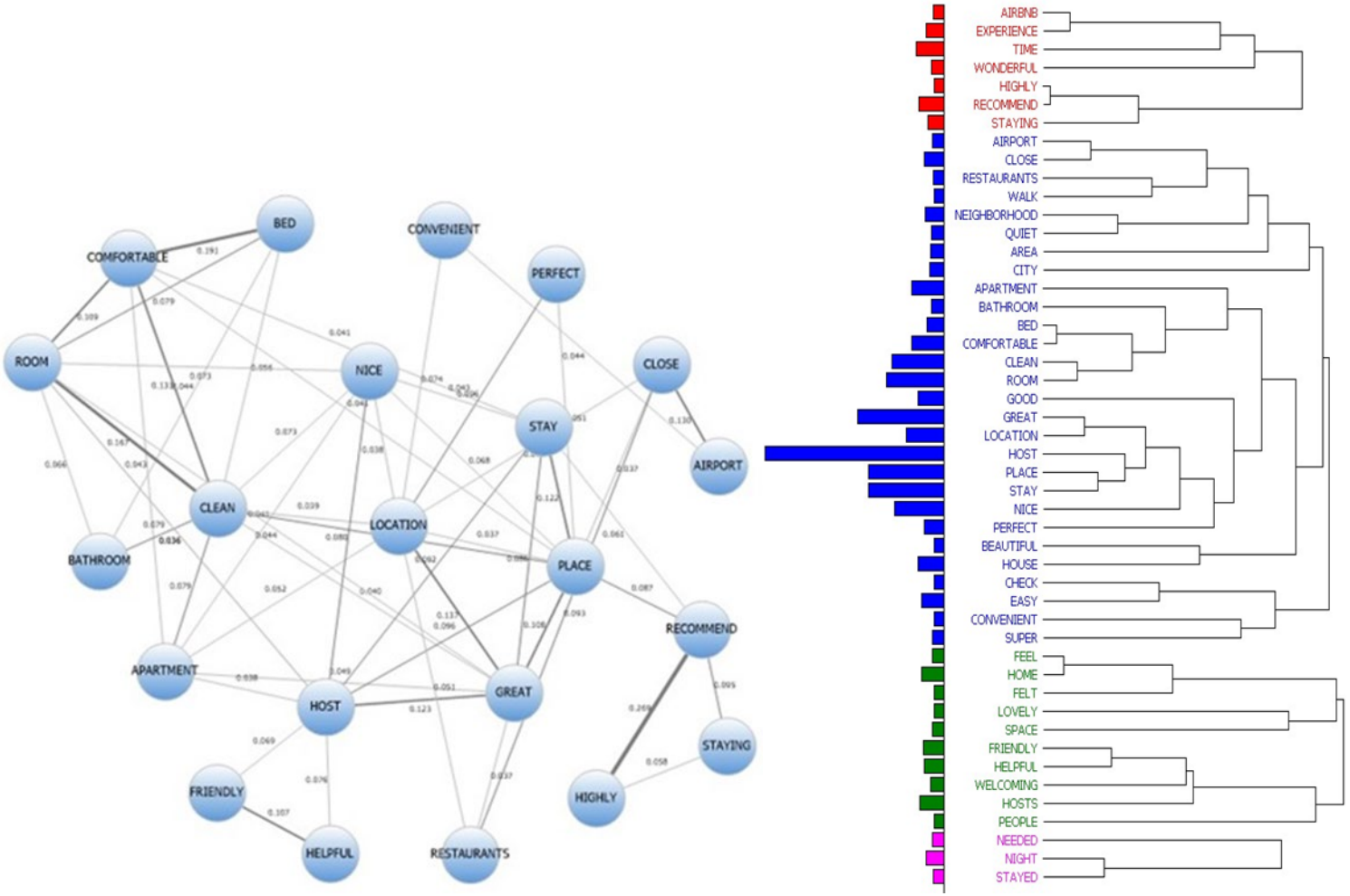

Figure 1. Visual Representations of Co-occurrence Analysis Results: Link Analysis (Left) and Dendrogram (Right)

Appendix

Review with highest positive sentiment score (215):

[The host] was great. The place is beautiful. Pictures are totally great. So sweet they provide a nice small welcome snack basket and drinks, very kind! Coffee as well! The bathroom is super clean and nice. They were kind enough to have shampoo products and plenty of towels. Both of the beds were very comfortable. The living space with the TV was great and they have a great collection of books. Neighborhood is nice, definitely do not need a car, the transit is nearby. And they are not far from the airport. My friend and I really enjoyed our stay at [host's]. Super easy to communicate with, everything was on point and they even helped accommodate us for our early flight in (they were quick to turn over the unit). It has beautiful lighting. Hardwood floors and just overall a really nice space. We sadly didn't get to meet the host but she was available to help with anything. I love this listing, a great place to stay (I stay in Airbnbs frequently and this one is great)!

Review with lowest negative sentiment score (−202):

We booked one night and didn't sleep there in the end. The room was dirty, the bathroom disgusting (piss and hairs in toilet, sink full of hair), the smell [was] terrible. In the room there were several bad-smelling carpets, a chair with something that looked like blood stains. Also, the neighborhood made a very bad impression on us and the fact that the door downstairs was unlocked all the time made us feel uncomfortable. The garden was full of junk and litter. Also, we really disliked the 100% anonymous stay - this place is only for making money out of tourists and travelers and not at all what Airbnb is

supposed to be about (meeting people at least for a second, feeling at home). Although I absolutely know that the price is relatively affordable for San Francisco and I didn't expect any sort of luxury [,] this place was not acceptable. After checking out the room and the bathroom we left, very disappointed, and booked a new place to spend the night. I would NOT recommend this place to anyone.