Service quality, satisfaction and customer loyalty in Airbnb accommodation in Thailand

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ABSTRACT

This paper investigates service quality, customer satisfaction and loyalty in Airbnb accommodation. A self-administered questionnaire was distributed to a non-probability sample of 202 international tourists in Phuket, Thailand, which is one of the top tourist destinations worldwide. The results verify that a positive relationship between service quality, customer satisfaction and loyalty exists, and that satisfaction partially mediates the relationship between service quality and loyalty. Furthermore, the paper suggests key steps managers could take to enhance customer experience in a way that would benefit the lodgings industry and the destinations.

INTRODUCTION

Although, hotels have long played a major role in the lodging industry (Solnet, Paulsen, & Cooper, 2010), a few new types of accommodation have emerged, some of which have unique features. Airbnb is an example of a new type of accommodation in the context of the sharing economy and network hospitality (Germann Molz, 2011). It appeals to a diverse range of people and is flexible to different customer requirements (Lu & Kandampully, 2016). Its disruptive and innovative business model is so influential that its value is currently estimated at $30 billion, which is greater than Hilton ($23.3 billion) and Hyatt Hotels Corp ($6.8 billion), two of the world's largest hotel corporations (Skift, 2016).

The arrival of Airbnb has put pressure on the lodging industry which operates in an intensely competitive and dynamic environment (Yang, Jou, & Cheng, 2011). This competitive pressure coupled with fluctuating tourism demand has pushed hotel managers to devise methods for outperforming competitors. With little differentiation between the hotel's products and services, they can either compete through price differentiation or develop customer loyalty by providing unique benefits to customers (Kandampully & Suhartanto, 2000). In this line of thinking, Berezina, Cobanoglu, Miller and Kwansa (2012) argue that accommodation quality and customer satisfaction are important antecedents in a visitor's decision making process and in creating customer loyalty. In fact, there is widespread consensus amongst academics and practitioners that customer satisfaction and service quality are pre-requisites of loyalty (Ahrholdt, Gudergan, & Ringle, 2017; Cronin & Taylor, 1992; Gremler & Brown, 1997).

The key roles of accommodation service quality and related customer satisfaction have also been noted as important antecedents in visitors' decision making processes, as well as in creating customer loyalty (Berezina et al., 2012; Liat, Mansori, & Huei, 2014; Yee, Yeung, &

Cheng, 2010). However, a debate still exists about the relationships between service quality, satisfaction and loyalty (Berezina et al., 2012). Even when high service quality is provided and a customer is satisfied, it does not necessarily mean that this customer will return (Reid & Bojanic, 2009). In the hospitality industry, possible explanations may relate to customer's dissatisfaction with the area (rather than with the accommodation), a customer's interest in new experiences (and thus interest in a different hotel or a different form of accommodation), or a customer being offered a better price by a competitor (Berezina et al., 2012).

The purpose of this study is to explore the interrelationship between service quality, satisfaction and loyalty in Airbnb accommodation. Airbnb accommodation in Southern Thailand was used as a research context. Thailand has been selected as a reference point of this research, as it is one of the most popular tourist destinations worldwide (UNWTO, 2015), with tourism contributing 9.3% of its total GDP in 2015 and projected to rise by 4.3% in 2016 (WTTC 2016). Additionally, Airbnb started venturing in Thailand in 2012, and as of July 2015 Airbnb had 5378 listings for entire places (house/apartment), 2774 listings for private rooms and 224 shared rooms (Airbnb.com). Moreover, the number of studies referring to Thailand's hospitality field is limited (i.e. Kang, Chiang, Huangthanapan, & Downing, 2015; Narangajavana & Hu, 2008). In doing so, the interrelationships between Airbnb service quality, guest satisfaction and loyalty are examined.

This study contributes to the hospitality discipline and extends our knowledge of Airbnb accommodation literature in the following way. Firstly, there is a dearth of empirical studies focusing on Airbnb as an accommodation business which has witnessed rapid growth in recent years (Guttentag, 2015; Tussyadiah, 2016). Secondly, this study is the first of its kind to explore service quality, customer satisfaction and customer loyalty issues in Airbnb accommodation at an international level. Rauch, Collins, Nale, and Barr (2015) point out that most of the studies

explore service quality in upscale (4-star) and luxury (5-star) hotels and therefore, more studies are needed to focus on other hotel/accommodation segments. Furthermore, Mohsin and Lockyer (2010) assert that service quality continues to be an issue requiring debate and research, and along with customer satisfaction, it is one of the prime challenges for the hospitality industry (Amin et al., 2013). In addition, satisfaction is a key driver for explaining tourist behavior (Gallarza, Gil Saura, & Arteaga Moreno, 2013; Hultman, Skarmeas, Oghazi, & Beheshti, 2015), while customer loyalty can be elusive to understand and create (Russo, Confente, Gligor, & Autry, 2016; McKercher, Denizci-Guillet, & Ng, 2012). From a theoretical viewpoint, this study sheds light on guests' decision making process while staying at Airbnb accommodation. Practically, it provides sharing economy practitioners with important insights for better marketing and managing Airbnb lodgings.

THEORETICAL BACKGROUND

Network Hospitality and Airbnb

Network hospitality is defined by Germann Molz (2011, p. 216) as the way people "*connect to one another using online networking systems, as well as to the kinds of relationships they perform when they meet each other offline and face to face*". This phenomenon is interrelated with the growth of online social networking, the reemergence of the sharing economy, and the diffusion of pop-up culture in electronic network communications (Germann Molz, 2014). Couchsurfing and Airbnb are well known examples of network hospitality.

Airbnb is an online platform enabling individuals (hosts) to rent their personal accommodation (rooms or apartments) to others (guests) on a short-term basis (Ert, Fleischer, &

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Magen, 2016). Thus, Airbnb offers lodging owners the opportunity to engage in hospitality and tourism entrepreneurship activities. Another important issue is that both the property hosts and guests are prompted to make use of the "Airbnb review system" where guests rate their hosts, and hosts rate their guests and the review is not made public until both of them have completed the review. If only one party has completed the review, it will be made public to the recipient and the community (Airbnb, 2016). This process requires that prospective sharers join a network where reputation and trust are often as valuable as currency (Shuford, 2015).

Airbnb started in 2008 and its growth since then has challenged the hotel industry (Ert et al., 2016; Oskam & Boswijl, 2016). Today, Airbnb reaches over 34,000 cities worldwide (Shuford, 2015) and in 2014 more than 155 million guests stayed in Airbnb accommodation which is nearly 22% more than Hilton Worldwide (Price Waterhouse Coopers, 2015).

According to Ikkala (2014), there are two main styles of hosting through Airbnb. The first one is called remote hospitality, which refers to hosting situations in which the host does not physically share the property (i.e. apartment) with the guest. The second one is the on-site hospitality type, where hosts and guests actually share the property.

Service Quality

Service quality as a concept has been investigated since the 1980s, however there is no universally accepted definition (Silvestri, Aquilani, Ruggieri, 2017). The pluralism of the definitions of service quality is due to the fact that the majority of them depend on the context and therefore these definitions focus on how the customer's requirements are met and how well the service delivered matches the customers' expectations (Namukasa, 2013). The literature indicates the existence of two schools of thought (i.e., Karatepe, Yavas, & Babakus, 2005). The

first one is the Nordic school of thought based on Groroos's (1984) two-dimensional model of technical quality (outcome) and functional quality (process). This means that the customer's perception of service quality is influenced not only by what is delivered (outcome) but also by how it is delivered (process) what is delivered the service process. The other one is the North American school of thought based on Parasuraman, Zeithaml, and Berry's (1988) five dimensional SERVQUAL model, measuring customers' experiences with the tangibles, reliability, responsiveness, assurance, and empathy aspects of the services delivered by a firm. For them, service quality is "a global judgment, or attitude, relating to the superiority of the service" (Parasuraman et al., 1988, p.16).

The importance of service quality in the lodging industry is well documented (e.g. Akbaba, 2006; Wu & Ko, 2013; Yang et al., 2011). In the hospitality context, there are numerous empirical studies examining and conceptualizing the construct of service quality (e.g. Albacete-Saez, Fuentes-Fuentes, & Lloréns-Montes, 2007; Briggs, Sutherland, Drummond, 2007). There is no universally accepted model for measuring service quality, however the SERVQUAL model (Parasuraman et al., 1985; 1988) despite criticism (Buttle, 1996) has been used by many researchers as a tool for measuring service quality in the hotel industry (e.g. Renganathan, 2011; Saleh & Ryan, 1991) and is still regarded as the leading model (Akbaba, 2006).

Other scholars proposed service quality instruments specific to the hospitality sector based on SERVQUAL. For example, Knutson et al. (1990), developed LODGSERV, Getty and Thompson (1994) designed the LODGQUAL, Mei, Dean, & White (1999) developed the HOLSERV. Getty and Getty (2003) developed the "Lodging Quality Index" (LQI) which was validated by Ladhari (2010) by applying it to the context of Canadian tourists. Akbaba (2006)

identified 25 service quality attributes from the initial 29 SERVQUAL attributes and five service quality dimensions namely "tangibles", "adequacy in service supply", "understanding and caring", "assurance", and "convenience".

Moreover, these studies provided mixed results in terms of service quality measurement, highlighting the fact that the evaluation of service quality is multidimensional (Ekinci, 2002) and that the recommended dimensions cannot be generic (Akbaba, 2006) since some of these can be different in different hotel settings (i.e. resort hotels, business hotels, motels) and cultures (Yang et al., 2011). Further research in hospitality (e.g. Ramanathan & Ramanathan, 2011), and in other tourism service contexts (e.g. Ahrholdt et al., 2017), has established the role of service quality as the antecedent for customer satisfaction, and customer satisfaction as an antecedent to loyalty.

Customer Satisfaction

The concept of customer satisfaction is one of the main themes in business scholarship and practice, since it links the process of purchasing and consumption with post-purchase phenomena (Liat et al., 2014), and is essential to long-term business success (Nam, Ekinci, & Whyatt, 2011). Chitty, Ward and Chua (2007) viewed customer satisfaction as a comparison between the sacrifice experienced (cost) and the perceived rewards (benefit) during the purchase and consumption process.

Qiu, Ye, Bai and Wang (2015, p. 91) suggest that customer satisfaction in hospitality can be defined "as the extent of overall pleasure or contentment felt by the customers, resulting from the ability of the hotel experience to fulfill the customer's desires, expectations and needs in relation to their hotel stay". In the tourism industry, various studies show the strong relationship between customer satisfaction and loyalty or intention to revisit and recommend the destination

to other people (e.g. Jeong, Oh, & Gregoire, 2003). Yee et al. (2010) found that service quality has a significant and direct impact on customer satisfaction and that the relationship between customer satisfaction and loyalty is also highly significant. However, other studies have questioned the robustness of the customer satisfaction and loyalty relationship and have suggested that other service dimensions may play a role in loyalty formation and sustainability (e.g. Skogland & Siguaw, 2004, Stylos & Vassiliadis, 2015).

Customer Loyalty

Customer loyalty as a concept and business practice in the marketing field has received increased attention by both academics and practitioners due to its importance for organizations (i.e., hotels), since it is associated with customer satisfaction (Oliver, 1997), and profitability (Heskett et al., 2008). In general, it is defined as a "commitment toward preferred products or services" (Liat et al., 2014, p. 318), while in the hospitality setting as "the likelihood of a customer's returning to a hotel and that person's willingness to behave as a partner to the organization" (Shoemaker & Lewis, 1999, p. 349). The literature (e.g. Dick & Basu, 1994; Kandampully & Suhartanto, 2000), shows that customer loyalty has been explained through its two facets: behavioral and attitudinal (Nam et al., 2011). Schall (2003) asserts that customer loyalty in the hospitality industry involves attitudinal and emotional commitment to a brand and thus it should focus more on the attitudinal component (Back, 2005; Han & Back, 2008).

Berezan et al. (2013) emphasize that many studies recognize the close relationship between customer satisfaction and loyalty, especially as an important determinant of attitudinal loyalty (e.g. Bennett, Hartel, & McColl-Kennedy, 2005; Rauyruen & Miller, 2007). Also,

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relevant literature has indicated that service quality is an important antecedent of customer retention (Prentice, 2013).

Conceptual Model and Hypotheses

Drawing on the theoretical background outlined previously, a conceptual model has been developed that demonstrates the influence of service quality on loyalty mediated by satisfaction (Figure 1). Therefore, the following three hypotheses will be examined:

H1: Service quality significantly and positively affects customer satisfaction with Airbnb accommodation.

H2: Satisfaction exerts a significant and positive influence on Airbnb customer loyalty.

H3: Service quality exerts a direct significant and positive effect on Airbnb customer loyalty.

[Figure 1 Here]

METHODOLOGY

Data Collection Process

All lodgings involved in the survey were of the remote hospitality type and focused only on whole apartments rented out. The lodgings were chosen through a two-stage sampling process and hosts were contacted via the Airbnb messaging platform to get their permission to run the survey at their rental lodgings. In the first stage, Airbnb accommodation was identified by using the web search facility. Accommodation (was chosen by applying the following filters: House type = entire place, Location = Phuket, price range less than £45. The descriptions and pictures provided by the Airbnb platform were used to assess the quality of the property. Based on these criteria mentioned above, our search resulted in 400 apartments listed in a random order. The

number of bedrooms per apartment varied from 1 to 4, although the vast majority of them were of one or two bedrooms only. The amenities offered in all lodgings were of a similar level (e.g. furniture, electric appliances and support services). Then, based on the search results the first 80 apartments were chosen and the hosts were contacted to seek permission to undertake this research. Fifty-six hosts gave permission to undertake this research. Subsequently, data were collected via a self-administered multi-item structured questionnaire in Phuket, Thailand during March 6-20, 2015 (see Figure 2). A team of four trained field researchers were recruited by one of the authors to carry out a reliable data collection process. The initial contact with the prospective participants took place during their accommodation check-in process and the questionnaire was distributed the last day before their departure in order to capture most of their experiences while they were still fresh. 301 Airbnb guests were approached and 265 agreed to participate in the survey. More than one guest per lodging was allowed to participate in the field research study, in case guests were willing to do so. However, only about 11% of the total number of respondents had other members in their party who filled out the survey. The guests returned the filled out questionnaires during the week according to their departure date; they handed in their responses during check out, which occurred between 12:00 and 15:00 hours. It took respondents an average of 12 minutes complete the questionnaire. In total, this procedure resulted in the collection of a non-probability sample of responses from 217 international English speaking tourists. Nonetheless, 3 cases representing guests that stayed in 3-4 bedroom apartments were excluded to create a uniform pool of data and enable concentration on 1-2 bedroom apartments only. Also, a thorough inspection of the data took place after inputting it into SPSS; this process revealed 12 more cases to be excluded due to an extreme response style. These cases were excluded from the data analysis to avoid causing problems in establishing

univariate or/and multivariate normality. Consequently, a final usable sample of 202 cases was used to run the data analysis.

[Figure 2 here]

Measures

The measurement instrument included questions aimed at obtaining behavioral information regarding Airbnb usage and demographic details. In order to measure guests' perceptions of service quality, the 25 items suggested by Akbaba (2006) were used. The three-item measurement scale proposed by Han, Kim, and Hyun (2011) was employed to assess satisfaction with Airbnb accommodation; loyalty was also measured via a three-item scale proposed by and applied by Salanova, Agut, and Peiró (2005). The items were measured using a five-point Likert scale anchored with 1=strongly disagree and 5=strongly agree (see Appendix A) and item loy38 was reversed before proceeding with data analysis. The final section's questions explored tourists' demographic details. To test the items of the questionnaire a pilot study was carried out, which resulted in improvements in the questionnaire format only. The survey questionnaire was pre-tested on 30 visitors during March 2-3, 2015.

Procedures and Data Analysis

Sample size considerations were taken into account as is normally the case prior to running any type of SEM analysis (Cohen, 1992; Hair, Hult, Ringle, & Sarstedt, 2014). Based on Hair, Ringle, and Sarstedt (2011), a minimum sample size resulted based on minimum R^2 equal to 0.25, maximum number of arrows pointing at a latent variable (i.e. overall service quality) being 5, for a statistical power of 80% at a 1% level of significance, an a-priori minimum sample

size estimation of 98 is recommended. Since the final sample to be used in data analysis is 202, it is deduced that the minimum sample size requirements are satisfied.

Regarding normality of the data, it has been supported by Esposito-Vinzi, Trinchera, and Amato (2010) that for sample sizes larger than 200, the multivariate normality assumption is relaxed via an asymptotic distribution-free estimation offered by PLS algorithm. Therefore, no further action is required with respect to data normality.

As far as data analysis is concerned, three distinct actions were taken through implementation of the PLS-SEM technique (i.e. due to a relatively small sample size) (Loureiro & González, 2008). First, construct reliability and validity were examined; secondly, a factor analysis was employed in order to prune the indicators that make a small contribution to explaining the latent constructs; finally, a path analysis with bootstrap generation was implemented to check the significance of the relationships between service quality, satisfaction and loyalty. Service quality has been conceptualized as a 1st order reflective – 2nd order formative construct based on its five dimensions, and it was modeled in Smart-PLS 3.0 accordingly.

In designing and conducting the main study, we took several steps to eliminate potential errors (Davidshofer & Murphy, 2005). In particular, a) we ensured that only visitors participated to reduce the coverage error (Moutinho & Chien, 2007), and b) we achieved an 81.88% (217/265) response rate, which suggests that non-response error is not an issue (Johnson & Owens, 2003). Then, prevention of any possible measurement errors was also secured through a balanced formulation of measurement scales (5-point Likert scales). Acquiescence was controlled by avoiding any usage of vague or ambiguous wording (Knowles & Condon, 1999) and midpoint responding was also taken into account during questionnaire construction by including an extra

point of response to the 5-point Likert scale, namely "0 = I don't know/I cannot reply" (Baumgartner & Steenkamp, 2001).

A series of research actions was applied to enhance the content validity and reliability of the measurements. The potential dangers of response bias were treated through specific procedures before, during and after data collection by a) providing a convenient setting for the respondents, thus reducing situational pressure (Paulhus, 1991) and b) shuffling the order of the questions for half of the questionnaires distributed (Danaher & Haddrell, 1996). Finally, a common latent factor test was executed to examine the amount of common latent variance among the model indicators. This was implemented by comparing the standardized regression weights before and after the introduction of the common latent factor in the measurement model (MacKenzie, Podsakoff, & Jarvis, 2005).

RESULTS

Sample Profile

Of a total sample of 202 tourists, a slight majority were males (51.5%) while 48.5% were female. In terms of marital status, 63.3% were married, while 34.6% were single. As far as age is concerned 34.1% were 26-35 years old, 31.2% were in the 36-45 age band, and 19.8% were 18-25 years old. Regarding occupation, 41% were private sector employees, 15.2% were students and 14.8% were entrepreneurs. With respect to educational level, 48.5% had a bachelor's degree, 28.7% had a high school diploma, and 13.9% had vocational training. In relation to tourists' area of residence, 44.5% of respondents came from Asia, 22.1% from Europe, 19.4% from the Middle East, and 12.6% from the USA. 89.1% of the tourists had already used service apartments provided by Airbnb.com before, and the highest rate of usage was 3 to 4 times per year (57.4%).

Finally, more than half of the respondents (51.5%) spent as much as £501 to £600 on boarding and lodgings, followed by those who paid between £401 and £500 (26.7%). The average length of stay was 6.8 days.

Data Analysis using PLS

First, missing values analysis (MVA) was used to deal with any missing data. The corresponding results indicated that all missing values follow a completely random pattern ($\chi^2 = 108.464$, df = 112, Sig. = 0.577) (Little, 1988). The factorial scheme of SmartPLS 3 was used to conduct a confirmatory factor analysis (CFA) (Esposito-Vinzi et al., 2010) in order to explicitly specify the pattern of loadings of the measurement items on the latent constructs in the model. An initial measurement model with service quality conceived as a second-order factor was assessed for all scales followed by a first-order factor hierarchical regression analysis that was performed to examine the final measurement model after creating latent variable composite scores for all constructs, i.e. service quality, satisfaction and loyalty. Furthermore, the causal relationships between service quality, satisfaction and loyalty were tested to predict the significance of influences. In addition, the explanatory power of the proposed theoretical model was defined.

[Table 1 Here]

Based on the confirmatory factor analysis results obtained in the initial outer model (second-order factor), the convergent validity, discriminant validity, and reliability of all the multiple-item scales were assessed against the guidelines published in previous literature (Hair, Black, Babin, & Anderson, 2010). Internal consistency, composite reliability and average

variance extracted (AVE) were used as measures of reliability and validity, respectively. Cronbach's alpha values have been found to vary between 0.850 and 0.978, while composite reliability values range from 0.908 to 0.982, both satisfying the condition for alpha, CR>0.70 (Hair et al., 2010) and AVE values range from 0.588 to 0.728, which is higher than the cut-off value of 0.5 (p<0.01) (Fornell & Larcker, 1981) as shown in Table 1. Discriminant validity was checked by comparing the AVE value of each construct to the square of the correlations between that same construct with the rest of the latent variables (Table 2). The correlation values were found to be smaller than the ones in the diagonal, thus supporting discriminant validity.

Furthermore, shared variance has been specified as a potential source of relationship inflation between independent and dependent variables (Lindell & Whitney, 2001). A PLS common method bias test was employed in this case to check for common method variance (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). A common method factor was incorporated into the model, linking to all observed variables of the theoretical constructs. Consequently, all CLF factor loadings were non-significant at a 0.05 level of significance and the indicators' variances obtained were essentially greater than their method variances. Specifically, the average substantive variance of the observed variables and the average method-related variance were found to be equal to 0.64 and 0.017, respectively, resulting in a ratio of 37:1. Thus, it is realistic to assume that common method variance should not essentially influence the validity of our estimates.

An iterative application of CFA was used to refine the proposed list of 25 items for the five antecedents of service quality to a final collection of 23 items, after pruning the indicators that appeared to have low communalities and factor loadings below 0.70 (Hair et al., 2010). One item (tan3) has been pruned from "Tangibles" and another one (ade20) from "Adequacy Service

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Supply" with loadings 0.253 and -0.521, respectively. All three "Service Quality" indicators have been found to satisfactorily reflect the underlying construct. Also, the coefficient of determination (R^2), effect size (f^2) and predictive relevance (Q^2) values are important for quantifying the predictive capabilities of the first-order model. The quality heuristic criteria that were employed showed that the model is of high predictive power (Table 3).

[Table 2 Here]

[Table 3 Here]

After the CFA procedure, relevant pruning, and confirmation of the scales had been completed, PLS-SEM was employed in order to reveal the influence of the 5 dimensions included in Akbaba's (2006) study on the service quality of Airbnb lodgings, as well as the influences between service quality, satisfaction and Airbnb customer loyalty.

The service quality construct has been treated as a second order one, where the five quality dimensions served as first-order factors. Then, the PLS regression algorithm was employed, using a 1st order reflective – 2nd order formative arrangement among the indicators, the five quality dimensions and service quality construct, respectively (see Figure 3).

[Figure 3 Here]

A final first-order factor model was then formed and tested, in respect to the outer and inner model, and with service quality, satisfaction and loyalty structured as composite scores of their respective indicators, after checking the discriminant validity of the first-order measurement model (see Table 4). Hence, service quality that was a second-order formative construct in the

first step of the analysis was then turned into a first-order reflective construct taking into account the derived second order formative value score.

[Table 4 Here]

An inner model was tested to check the structural relationships of the conceptual model shown in Figure 1. A set of latent variable scores was produced for service quality, satisfaction and loyalty, based on which the first-order model structural relationships were examined (see Figure 4). The significance of the paths was examined using regression weights and t-statistics (Table 1) to calculate the corresponding p-values, based on a bootstrapping technique readily available from SmartPLS 3. Finally, the explanatory power and paths significance of the second order factor structural model were provided by implementing bootstrapping with a sample of 5000 subsamples.

The predictive capabilities of the final first-order model were also assessed with Q^2 values being particularly high for satisfaction and loyalty alike (Table 3). Moreover, the resulting R^2 adjusted value for satisfaction and visitor's loyalty is 0.786 and 0.816 respectively, showing substantial effects (>0.75) according to Henseler, Ringle and Sinkovics (2009); thus, the degree of variance explained for service quality is very high. Then, the changes in R^2 value when exogenous variables are omitted from the model are provided by the f^2 effect size; as shown in Table 4 convenience and assurance represent medium effects, whereas tangibles, understanding & caring, as well as adequacy in service supply have small ones. Effect size values of service quality to satisfaction and loyalty are interpreted as medium and large, respectively.

[Figure 4 Here]

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Finally, using the blindfolding procedure for executing the Stone-Geisser test with an omission distance D=7, we conclude that the proposed model has high predictive relevance for all endogenous constructs as shown on Table 3 (Hair et al., 2014). Path loadings (regressions weights) have been calculated to quantify the significance and direction of the relations between the quality dimensions and service quality, as well as the relations between service quality, satisfaction and loyalty. Regarding service quality dimensions, the most significant and positive effects resulted from 'adequacy service supply' and 'understanding & caring' with path coefficients of 0.263 and 0.218, respectively (p<0.001). Tangibles, assurance and convenience also exert positive influences on service quality, which have been found significant at a 0.001 level of significance. Then, the final structural model indicates that satisfaction increases 0.887 standard deviations per unit of increase in service quality. Thus, service quality significantly and positively influences satisfaction confirming H_1. Furthermore, satisfaction exerts a significant and positive influence on Airbnb visitors' loyalty, supporting H_2 ($\beta_{sat-loy}$=0.554, p<.001). Finally, the direct effect of service quality on loyalty has also been found significant and positive ($\beta_{sat-loy}$=0.376, p<.001), confirming H_3. Hence, a partial mediation scheme has been revealed with satisfaction acting as the mediator in the relationship between service quality and loyalty. Table 3 summarizes regression weights, t-statistics and p values for the structural (inner) models calculated based on 5000-subsamples bootstrapping.

CONCLUSIONS

Service quality, customer satisfaction and loyalty are crucial elements for business success and it is now more important than ever that business's understand and monitor them (Liat et al., 2014).

From a theoretical prism, the present study furthers our knowledge of hospitality services by empirically examining the relationships between service quality, customer satisfaction and loyalty in a new type of hospitality accommodation, namely Airbnb.

Reflecting the rising level of competition, managers are constantly seeking to develop a loyal customer base so that customers may act as hospitality business ambassadors and become lifelong patrons. In particular, this research established that guest satisfaction partially mediates the relationship between service quality and loyalty for Airbnb accommodation, in congruence with similar findings of previous hotels-related literature. Although various studies have been undertaken to confirm this relationship, this is the first study in the Airbnb context wherein the establishments are operated by enthusiastic amateurs instead of hoteliers. This is an indication that the influence of service quality and satisfaction on tourists' loyalty may not depend on the type of lodging, although more research is needed to support this conclusion.

Managerial Implications

The present research study has some key managerial implications for networking hospitality and particularly for Airbnb accommodation. The current findings can help Airbnb hosts better understand how each service quality dimension can contribute to a pleasant experience, which in turn would potentially affect post consumption behavior (e.g. word of mouth) (Su, Swanson, Chen., 2016; Kamenidou, Balkoulis, & Priporas, 2009). It can help the hosts to know their guests better, to focus on guests' desires regarding service quality and to satisfy the needs, desires and demands of their existing and potential customers, which could lead to increased customer satisfaction, retention, loyalty, and ultimately financial performance (Chen & Chen, 2014; Wu & Ko, 2013; Yang et al., 2011). As an authentic example of a new innovative accommodation

approach, Airbnb's business model indicates that there is a connection between service quality, satisfaction and loyalty, thus bridging the traditional service dominant logic of hospitality with the innovative one of creating one's own tourism destination experiences (Yannopoulou, Moufahim, & Bian, 2013).

The findings are important for the hospitality industry as they delineate the behaviors of that large number of hospitality customers who wish to use alternative hospitality services in a rapidly changing visitor economy (Lu & Kandampully, 2016). For example, previous research has identified tangibles (Akbaba 2006; Albacete-Saez et al., 2007) and reliability (e.g. Juwaheer 2004; Knutson et al., 1990) as the key dimensions that have a significant impact on service quality. However, in this research it has been found that the facet of understanding and caring has significant positive effects on service quality compared with others. This reflects the nature of Airbnb business as it operates on a peer to peer (P2P) model, wherein guests tend to develop a personal relationship with the host. This finding will be useful for hosts interested in developing long term relationships with their customers. Airbnb Incorporated may also put in use the results of this study in an effort to improve promotion of Airbnb lodging services by investing in the service quality components that mostly contribute to guests' satisfaction and loyalty to the portal and the business model itself. This could also attract the interest of new hosts to list their properties in Airbnb Inc. The findings could enhance the review system of the Airbnb platform, thus emphasizing the quality indicators that define satisfaction and ultimately loyalty, with the latter widely considered as a proxy of actual tourists' behavior (Stylos, Bellou, Andronikidis, & Vassiliadis, 2017).

Limitations and Future Research

Although the study reveals meaningful findings and provides some important insights into the current literature, it is not without limitations. Airbnb is the largest network which rents private properties to tourists, but it is not the only one. Despite the appropriateness of using the measurement tools provided by Akbaba (2006), Han et al. (2011) and Salanova et al. (2005) future studies may cross-validate the findings using other measurement instruments, such as LODGQUAL, LQI and in other destinations. Moreover, future research may include lodgings promoted by various social networking channels. Further research could be conducted on other types of Airbnb accommodation such as on-site hospitality, since this research focused only on remote hospitality. Furthermore, future studies on service quality, customer satisfaction and loyalty in the hospitality industry could aim to compare the guest's experience of Airbnb accommodation with their experience of hotels. Finally, forthcoming research could explore Airbnb hosts perceptions of service quality, customer satisfaction and loyalty. Overall, future studies could benefit from these findings by extending the investigation of the emerging research area of Airbnb.

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Table 1: Assessment of the initial measurement model (2nd order service quality construct)

Constructs/ Items	Mean (SD)	Loadings	Std. Error	T-statistic	Cronbach's alpha	CR	AVE
Tangibles					**0.971**	**0.978**	**0.726**
tan4	2.97 (1.10)	0.959	0.005	194.19			
tan5	3.47 (1.23)	0.957	0.004	236.48			
tan6	2.89 (1.30)	0.940	0.008	110.26			
tan7	2.97 (1.10)	0.910	0.008	109.83			
tan8	2.84 (1.13)	0.970	0.004	260.47			
Convenience					**0.933**	**0.957**	**0.711**
con14	3.17 (1.25)	0.917	0.009	96.16			
con26	3.85 (1.03)	0.949	0.005	176.92			
con27	3.81 (0.88)	0.951	0.005	181.19			
Assurance					**0.963**	**0.973**	**0.724**
ass22	4.01 (0.98)	0.968	0.004	225.51			
ass23	4.14 (0.97)	0.956	0.005	188.99			
ass24	3.59 (1.14)	0.921	0.008	117.97			
ass25	3.27 (1.10)	0.952	0.007	138.57			
Understanding & Caring					**0.961**	**0.970**	**0.694**
und15	3.66 (0.90)	0.930	0.010	85.94			
und17	2.85 (1.08)	0.938	0.008	112.07			
und18	3.94 (1.09)	0.902	0.010	89.01			
und19	3.65 (1.11)	0.958	0.004	251.24			
und21	3.00 (1.17)	0.926	0.009	103.43			
Adequacy Service Supply					**0.978**	**0.982**	**0.728**
ade9	3.91 (0.67)	0.901	0.012	72.14			
ade10	3.32 (0.95)	0.953	0.005	201.31			
ade11	3.46 (1.18)	0.963	0.004	224.84			
ade12	3.49 (1.22)	0.955	0.005	187.82			
ade13	3.11 (1.31)	0.964	0.004	225.910			
ade16	3.18 (1.27)	0.957	0.005	175.45			
Satisfaction					**0.933**	**0.957**	**0.714**

sat33	4.20 (0.54)	0.926	0.013	54.52			
sat34	3.89 (0.87)	0.941	0.010	92.53			
sat35	4.15 (0.66)	0.948	0.009	99.78			
Loyalty					**0.850**	**0.908**	**0.588**
loy36	2.77 (0.63)	0.698	0.06	11.07			
loy37	4.00 (0.88)	0.944	0.008	117.66			
loy38	2.10 (1.04)	0.967	0.005	211.68			

Table 2: Discriminant validity of the initial measurement model (2nd order service quality construct)

		1	2	3	4	5	6	7	8
1	Adequacy Service Supply	**0.853**							
2	Assurance	0.547	**0.851**						
3	Convenience	0.508	0.530	**0.843**					
4	Loyalty	0.438	0.420	0.436	**0.767**				
5	Satisfaction	0.481	0.483	0.495	0.462	**0.845**			
6	Service Quality	0.533	0.530	0.521	0.461	0.495	**0.835**		
7	Tangibles	0.534	0.541	0.539	0.429	0.480	0.590	**0.852**	
8	Understanding & Caring	0.532	0.528	0.526	0.464	0.481	0.532	0.526	**0.833**

The bold diagonal shows the square root of the average variance extracted (AVE).

Table 3: Effects on endogenous variables and statistical significance of relationships (initial and final structural models)

	Initial model (2nd order Service quality)					Final model (1st order constructs with latent variable scores)			
	f^2	Q^2	St. Regression Weights	S.E.	T-statistics	Q^2	St. Regression Weights	R^2adj	p-value
Service Quality		0.865							
Tangibles	41.913		0.202	0.005	37.434				
Convenience	41.078		0.139	0.003	43.092				
Assurance	119.419		0.193	0.004	43.123				
Understanding & Caring	38.090		0.218	0.004	47.608				
Adequacy Service Supply	71.498		0.263	0.003	81.127				
Satisfaction		0.669				0.782		0.786	
Service Quality	3.410			0.013	67.385		0.887		0.000
Loyalty		0.605				0.805		0.816	
Satisfaction	0.344			0.073	7.086		0.554		0.000
Service Quality	0.192			0.069	5.544		0.376		0.000

Table 4: Discriminant validity of the final measurement model (1st order constructs)

		1	2	3
1	Loyalty	**1.000**		
2	Satisfaction	0.594	**1.000**	
3	Service Quality	0.570	0.595	**1.000**

The bold diagonal shows the square root of the average variance extracted (AVE).
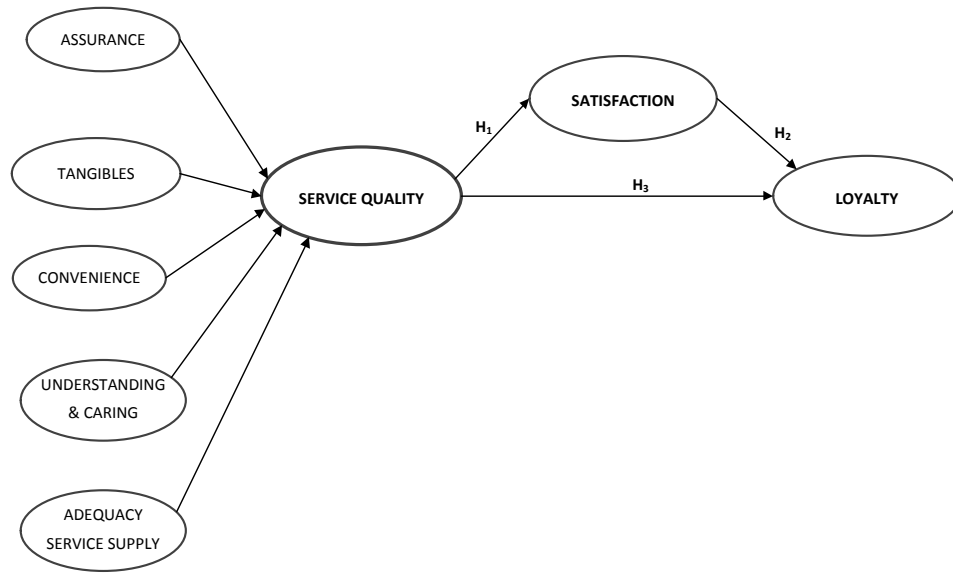
Figure 1: Conceptual model.

Figure 2: Satellite Image of Phuket (Photo by NASA, public domain, Wikimedia Commons, 2009)
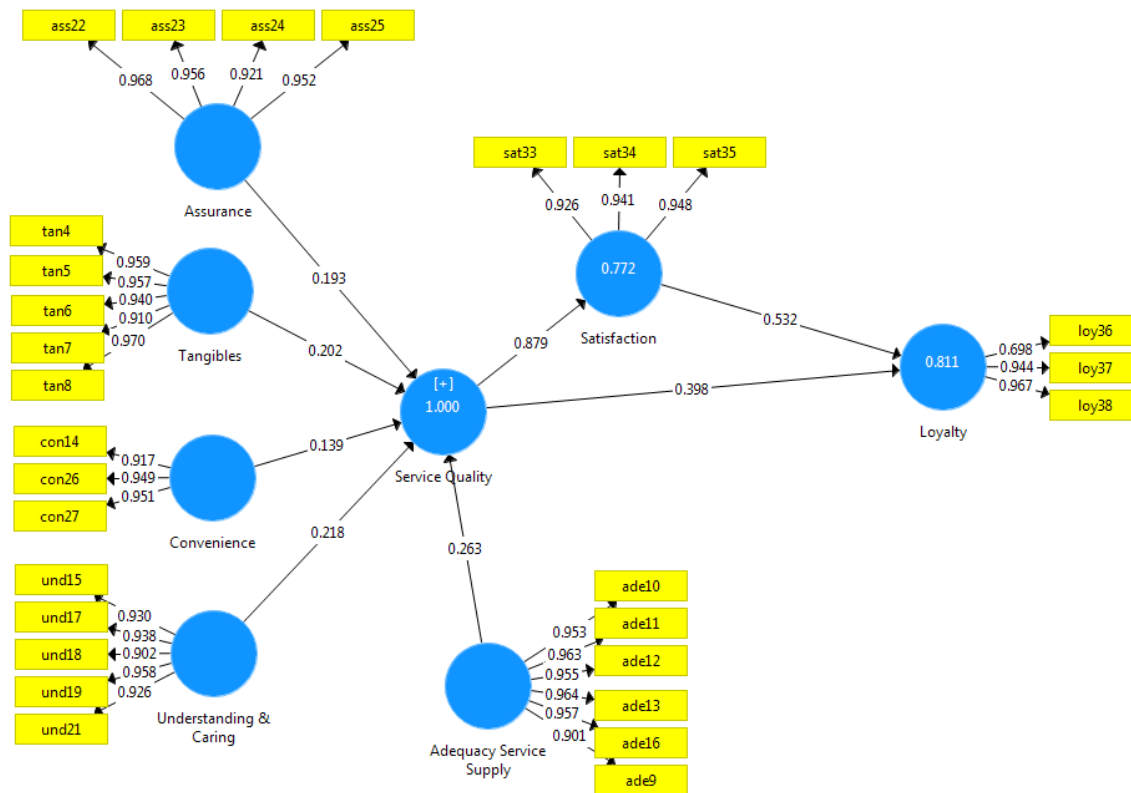
Figure 3: Structural model (2nd order formative-1st order reflective) with item loadings, standardized regression weights and adjusted squared multiple correlation

Figure 4: Final Structural model (1st order constructs) with standardized regression weights and adjusted squared multiple correlations

Appendix A. Measurement items for study constructs

Construct	Measurement items
Tangibles	Food and beverages served (tan3)
(Strongly disagree [1] – Strongly agree [5])	Adequate capacity (tan4)
	Modern looking equipment (tan5)
	The equipment of the lodging works properly (tan6)
	Materials associated with the services are adequate and sufficient (tan7)
	Atmosphere and equipment confortable and appropriate (tan8)
Adequacy Service Supply	Providing the services as they were promised (ade9)
(Strongly disagree [1] – Strongly agree [5])	Performing the services right the first time (ade10)
	Airbnb owners are always willing to serve (ade11)
	Airbnb owners are always available when needed (ade12)
	Provision of services at promised times (ade13)
	Consistency in services (ade16)
	Providing prompt service (ade20)
Understanding & Caring	Flexibility in services (und15)
(Strongly disagree [1] – Strongly agree [5])	Providing assistance in other required areas (und17)
	Treating guests in a friendly manner (und18)
	Understanding the specific needs of guests (und19)
	Individualized attention (und21)
Assurance	Convenient operating hours (ass22)
(Strongly disagree [1] – Strongly agree [5])	Providing a safe and secure place (ass23)
	Instilling confidence in guests (ass24)
	Occupational knowledge of Airbnb owners (ass25)
Convenience	Resolving guest complaints (con14)
(Strongly disagree [1] – Strongly agree [5])	Ease of access to the lodging (con26)
	Reaching information (con27)
Satisfaction	
(Strongly disagree [1] – Strongly	I am happy with my decision to stay at this Airbnb accommodation (sat33)

agree [5]

I believe I did the right thing when I stayed at this Airbnb accommodation (sat34)

Overall, I am satisfied with the decision to stay at this Airbnb accommodation (sat35)

Loyalty

If possible, I will return to this Airbnb accommodation in the future (loy36)

(Strongly disagree [1] – Strongly agree [5])

I will recommend this Airbnb accommodation to other people (loy37)

I will warn people about this poor Airbnb accommodation (loy38)