

## Development of Measurement Scale for Functional Congruity in Guest Houses

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**Abstract:**

The rapid development of guest houses in China intensified business competition. Understanding the experiences and expectations of customers can help guest houses gain advantage over competitors when customers are particular about their accommodation experience. Given the limited discussions, only a few systematic approaches were developed for the functional needs of customers toward guest houses. Thus, the present study developed a measurement scale for the functional congruity of guest houses based on the procedures recommended by Churchill (1979). The scale was tested, which was found reliable and valid. Marketing implications were provided theoretically and practically based on the results.

Keywords: functional congruity; guest house; measurement scale development

**1. Introduction**

Specialist accommodation, which focuses on bedding rather than on other services, has become an important choice for an increasing number of tourists. These types of accommodation are regarded as “commercial home” (Lynch, 2005), which include B&Bs, guest houses, home stays, farm stays, small hotels, and host family accommodations. Although the names of houses in this sector may vary, the essential aspects are similar; for example, guests pay accommodation fees to stay in private homes and customers interact with a host and/or a family (Lynch, 2005). The popularity of this type of lodging establishments started in the US in the early 1990s (Lanier & Berman, 1993) and has spread to other areas, especially Asian countries/regions, such as Japan, Taiwan, and South Korea. Airbnb and other similar companies may boost the industry of specialist accommodation in the current age of sharing economy.

Guest houses in Mainland China have become popular to tourists, especially in historical towns and countrysides. According to the data provided by Ctrip, the largest online travel agency in China, guest houses in the Old Town of Lijiang in Yunnan Province (<http://inn.ctrip.com/inn/lijiang37/zone462>) reached 1,500 by the end of July 2017; moreover, around 300 inns opened in Mogan Mountain area in Zhejiang Province ([http://inn.ctrip.com/inn/moganshanD87\\_1367](http://inn.ctrip.com/inn/moganshanD87_1367)). However, the increasing number of guest houses in a particular destination surpassed the demand due to copycat investment. Thus, business competition in the industry intensified. Guest houses should exert their best effort to attract and maintain tourists to survive and develop in such an industry. However, most guest houses have limited marketing budgets. Word-of-mouth (WOM) marketing is viewed as the most successful marketing strategy for guest houses (Lee, Reynolds, & Kennon, 2003).

The lodging experiences and expectations of guests can be sufficiently addressed if the congruity between what customers want and what the industry offers is examined. However, past expectation studies ambiguously defined customer expectation (Hung, Wang, & Tang, 2015). Two types of customer expectation were identified in existing literature, namely, normative and predictive expectations; the former refers to the experience desired by customers (i.e., what customers want), whereas the latter refers to the experience they expect to receive (i.e., what the industry offers) (Lee, Lee, & Yoo, 2000). Understanding the gap between these two types of expectations is important in creating a desirable lodging experience for customers. However, existing literature focuses on a specific type of expectation instead of both. The present study focuses on understanding the two types of expectation using the concept of functional congruity.

To provide an improved experience for customers, guest house owners and managers in China exerted effort to examine the psychological attributes of their establishments (e.g., home atmosphere, host-guest interaction), but functional (utilitarian) accommodation factors were not investigated in-depth (Peng & Zeng, 2010). A considerable number of studies in tourism and hospitality areas indicate that self-congruence and functional congruence are essential for understanding tourist decision-making (Sirgy & Su, 2000). Self-congruity pertains to the match between the product image and self-concept of the tourist, whereas functional congruity refers to the match between the perception of product utilitarian attributes and the tourist desires toward such attributes (Sirgy & Su, 2000). Self-congruity may be the sole reason for purchasing behavior in the context of luxury consumption (Hung & Petrick, 2011); by contrast, the behavior of consumers in other contexts can be strongly predicted by functional congruity between their needs and the services and facilities offered by suppliers (Sirgy, Johar, Samli, & Claiborne, 1991). However, self-congruity has been the central focus of congruity literature, whereas functional congruity receives less attention. Understanding functional congruity is critical to the success of small businesses given that the majority of guest houses in China are small-scale and do not fall into the category of luxury product/service.

Several studies were conducted that focused on the experiences of customers in guest houses (e.g., Radder & Wang, 2006; Wang & Hung, 2015), but a systematic approach of examining functional congruity regarding this type of accommodation remains lacking. Customer expectations of guest houses as a type of specialist accommodation offer products and services that may differ from that of regular hotels. Thus, the application of the scale of

functional congruity based on other types of hotels to the guest houses is not appropriate. This topic should be investigated in the context of guest houses. Therefore, by applying the modified procedure of developing measures recommended by Churchill (1979), the present study attempts to develop a measurement scale for functional congruity in guest houses in Mainland China. This approach could provide a foundation for future research on this topic and help guest house owners/managers create a positive lodging experience for customers.

## **2. Literature Review**

### ***2.1 Functional Congruity***

Functional congruity is defined as the match between consumers' desired utilitarian features of a product and their perceptions of how the product is perceived along the same features (Kressman et al., 2006, p.955). For example, when selecting a guest house, a tourist may consider the proximity of the guest house from the main tourist attractions, price range of alternative guest houses, facilities of the guest house, and the quality of services provided. These evaluative criteria are utilitarian or functional in nature. Functional congruity was traditionally captured using multi-attribute attitude indices, wherein the attributes are functional consequences involving financial costs and utilitarian benefits (Sirgy & Samli, 1985; as cited in Sirgy, Grzeskowiak, & Su, 2005).

The theory of functional congruity was widely applied in consumer behavior. For example, Sirgy et al. (2005) argued that home buyers are likely to consider functional and symbolic aspects in their housing choice. In mall evaluation, Massicotte, Michon, Chebat, Sirgy, and Borges (2011) found that mall atmosphere positively affects functional congruity, whereas self-congruity and functional congruity positively affect the mall evaluation of adult and

teenage shoppers. In tourism contexts, Hung and Petrick (2011) suggested that functional congruity has a positive influence on cruising intentions; the dimensions of functional congruity include service, space, and activities. In terms of destination choice, Ahn, Ekinci, and Li (2013) used a sample of 367 British residents and found that the destination choice of tourists was strongly influenced by functional congruence instead of self-congruence; functional congruity includes five factors, namely, tourist facilities and comfort, quality of food, cultural heritage, tourist leisure activities, and quality of natural resources.

One may confuse satisfaction with functional congruity. The disconfirmation paradigm (i.e., expectation-disconfirmation model), which was first proposed by Oliver (1980), was traditionally used to measure customer satisfaction. According to this paradigm, consumers develop expectations about a product before purchasing a product/service. Subsequently, they compare actual performance with those expectations. Researchers have not reached a consensus regarding the use of this approach to measure satisfaction. Some researchers argue that this is a better approach (Szymanski and Henard 2001 from marketing field), but others proposed alternative approaches to measure satisfaction. For instance, Baker and Crompton (2000) used both perception and expectation scales in their study and found that perception has higher predictability on behavioral intentions. Petrick and Backman (2002) investigated the determinants of the overall satisfaction of golf travelers; they found that Oliver's model may be improved with the inclusion of information satisfaction. Nevertheless, most studies measure satisfaction with either the disconfirmation paradigm (Heung & Cheng, 2000; Teye & Leclerc, 1998; Zhang & Chow, 2004) or perceived overall performance (Tse & Wilton, 1988).

Functional congruity differs from satisfaction in four ways. First, the expectation in functional congruity refers to the normative instead of predictive expectation, whereas the opposite applies in satisfaction measure. Second, satisfaction may include both cognitive and affective measures, but functional congruity is geared toward understanding the cognitive instead of affective aspect of customer expectation and perception. Third, while overall satisfaction is commonly applied, item-to-item approach is the only measure being used in functional congruity literature thus far. Fourth, the perception measure in satisfaction refers to customer evaluation of product/service after their actual experience, whereas in functional congruity, it refers to customer perception with or without experiencing the product/service.

## ***2.2 Lodging Experience of Specialist Accommodation***

Guest houses and other types of specialist accommodation present an alternative option to regular hotels for a niche market. Most hospitality studies focus on regular hotels, but only a few focused on specialist accommodation. Existing literature is sporadic in terms of customer experience or service quality in specialist accommodation. Zane (1997, as cited in Wu & Yang, 2010) polled 1,400 American B&B customers and found that personalized service, comfort of bed, homeliness feel, privacy, cleanliness, and a B&B owner's advice on things, such as tourist attractions and restaurants, were the most important factors they consider in their choice of a B&B. Results of factor analysis of a survey of 300 business travelers in South Africa indicated seven dimensions of guest house service, which include professional skills and abilities, general amenities, room amenities, core service, convenience, functional skills and abilities, and ambiance. Interestingly, business travelers deemed secure parking and professionalism of staff as the most important attributes (Radder & Wang, 2004). Another study on guest experiences in B&B in South Africa suggested five factors of service quality, namely, assurance, empathy, tangibility, responsibility, and reliability (Tichaawa & Mhlanga,

2015). In addition, Amoach, Radder, and Eyk (2016) examined perceived experience value of guest houses in Ghana, and indicated seven dimensions of experience value, namely, atmospherics, enjoyment, entertainment, escape, efficiency, excellence, and economic value, which include emotional and conventional functional factors.

Among the studies in Asia, the one by Wu and Yang (2010) on B&B in Taiwan suggested 25 B&B service quality elements, which were categorized them into five constructs, namely, hardware (facilities), software (service), environment, management, and emotion. In the case study of the bed and breakfast industry in Kinmen, Taiwan, the dimensions of service quality perceived by B&B customers were identified as physical environment and personal interaction quality through literature and focus group discussions. Physical environment included equipment, décor, and design ambience, whereas interaction covered the expertise and problem-solving skills of employees (Chen, Chen, & Lee, 2013). Jo, Lee, and Reisinger's (2014) research on Korean hanok guest houses measured service quality by extracting from festival literature; service quality was measured with 14 items, that is, six items for staff and eight items for facility.

The guest house industry in China has been rapidly growing in recent years and even attracted a number of investments given the country's developing economy. However, the successful operation of guest houses remains a vital issue due to intense business competition. By content analyzing online user-generated review, including positive and negative comments, Wang and Hung (2015) found seven major factors that influenced Chinese customer experiences regarding guest houses; these factors include home atmosphere, room facilities, other facilities, service, cleanliness, location, and value for money.



These studies investigated guest experiences regarding specialist accommodation, but results may be constrained due to culture differences, development stage of the industry, or lack of systematic approach. Customer experience is often studied with reference to only one of two customer expectations (normative expectation and predictive expectation) without integrating both aspects. This approach is inadequate in understanding the gap between what is desired and what is offered. Given the current popularity and copycat approach of guest houses in Mainland China, the functional attributes of this sector that may lead to further customer satisfaction and business success should be examined. The development of functional congruity in lodging context enables the comparison of two types of expectation in one construct, which provides immediate information to the industry for improving customer experience, which is the first of its kind in expectation and experience literature.

In addition, existing research tends to focus on accommodation service from the perspective of customers, with the presumption that guest houses should do well in all aspects; this expectation deviates from the nature of guest houses (Wu & Yang, 2010). Leading guest houses are conducting accurate market positioning and matching their service and/or facilities design and/or management with their target customers (Brochado, Troilo, & Shah, 2017). This issue is worthy of in-depth study. Therefore, the purpose of the present study is to enhance understanding and develop a measurement scale of the functional congruity toward guest houses in Mainland China. This functional congruity measure provides a benchmark to help owners/managers design their guest houses and improve service. Functional congruity also acts as a reference for further investigation of the needs of travelers in guest houses.

In this study, functional congruity is based on the match of customers' cognitive attributes of guest houses and their normative expectations in relation to those attributes. Given the

experiential nature of tourism and hospitality services, learning from previous service experiences may result in more accurate and stable expectations (Yüksel & Yüksel, 2001). Moreover, experienced tourists are likely to be more motivated and able to evaluate utilitarian attributes (Sirgy & Su, 2000). Given the limited studies conducted on customer expectation of guest houses, a comprehensive content analysis of user-generated comments could be used to develop the pool of measurement items for functional congruity because customers tend to post their reviews based on a comparison of their received performance of guest houses with their desired expectations. Focus group discussion with experienced customers may also help in confirming the item pool. A systematic approach is needed to refine and test the measurement scale.

### **3. Research Methods**

A modified procedure of developing measures recommended by Churchill (1979) was applied to derive functional congruity measures for guest houses. Three steps were taken: (1) generation of measurement items, wherein content analysis of online user-generated comments and focus group discussion were conducted to derive measurement items; (2) expert panel and pilot test in which measurement items were further refined and revised; (3) a final survey was conducted, wherein reliability and validity of the measure were examined.

#### ***3.1 Generating Measurement Items***

Some methods were suggested by Churchill (1979) to generate measurement items; these methods include literature search, experience survey, insight-stimulating examples, critical incidents, and focus groups. Two qualitative research techniques were used in this study given the limited literature on the functional needs of Chinese customers toward guest houses. First, a comprehensive content analysis of online user-generated comments was conducted to

generate a list of measurement items. Given that WOM is the most important marketing strategy for guest houses and the fact that this industry is still in its early development stage in Mainland China, analyzing the content of customer comments is the best way to obtain full understanding of the experiences of customers in a hotel (Stringam & Gerdes, 2010). WOM contains key elements of consumer experience regardless of the positive or negative review (Pantelidis, 2010). Thus, 405 user-generated comments (211 positive reviews and 194 negative ones) regarding guest houses were derived from the Ctrip website through convenience sampling. The comments were then assessed in terms of the descriptions of services and facilities offered by guest houses by matching the characteristics and needs of customers. Second, a focus group discussion was conducted with seven people who stayed in guest houses (four stayed within the year, and the others stayed a year before). They were invited to discuss the suitability of the items from content analysis of user-generated comments and include additional items. Finally, 48 functional congruity items of guest houses were included in the item pool.

### ***3.2 Expert Panel and Pilot Test***

Step 2 utilized a panel of experts and pilot test. A draft of questionnaire was designed based on the 48 functional congruity items generated from Step 1. The questionnaire expressed functional congruity items ideally. The respondents were asked to compare the items with their experiences of staying in guest houses and indicate their agreement with the items. A seven-point Likert-type scale was used, wherein “1” means “strongly disagree” and “7” as “strongly agree.” The questionnaire was then submitted for review by a panel of experts consisting of two faculties and six PhD students with research expertise in tourism/hospitality. The panel judged the applicability of the measurement items to the study, design of the

questionnaire, and other aspects of the survey to improve its quality. A total of 42 items were retained from the panel review.

A small sample of the pilot test was selected through convenience sample comprising 25 Mainland Chinese who stayed in guest houses in China (12 stayed in a guest house within the year and 13 stayed a year ago). The purpose of the pilot test was to improve the design of the questionnaire. Participants were asked to indicate the completion time, clarity, duplicability, and representativeness of each item. Duplicate items were not reported, but the participants made constructive suggestions regarding the expressions of some items to facilitate understanding.

### ***3.3 Final Survey***

The measurement scale was further validated with the data collected from an online panel study. The following screening question was designed to identify eligible respondents: “Have you stayed in any guest houses in Mainland China in the past 12 months?” Participants were asked to rate their agreement to the functional congruity regarding guest houses from strongly agree (=7) to strongly disagree (=1). Wenjuanxing ([www.wjx.cn](http://www.wjx.cn)), the largest survey company based in Mainland China, was employed to randomly distribute the link to the online questionnaire (Appendix) to qualified online panel members of the survey company. This company claims that they maintain panel representativeness of the Chinese population and invite participants following the study population requirements specified by tourism and hospitality researchers. Initially, 1,066 respondents participated in the survey, but 828 valid samples were retained for data analysis after data cleaning (filtering out incomplete responses). As the respondents were randomly selected by the company, the sampling of the research was close to random sampling. Thus, the method provided by Cochran (1977) was

adopted to test the adequacy of sample size; results indicate that the minimum sample size is 380. Therefore, the size of the sample (which would be divided) is adequate for this study.

In the survey, respondents were also asked to provide demographic information. The profile information of Chinese travelers in 2016 provided by China National Tourism Administration (2017) was adopted as reference. The results could partly indicate the representativeness of this survey. The gender ratio of the participants is 46.9% (male) to 53.1% (female). The profile of the age groups is as follows: below 25 (13.9%); 25–29 (31.6%); 30–39 (43.4%); 40–49 (9.1%); and over 50 (2.0%). A significant difference was not observed between the survey and the population of Chinese travelers in terms of the age of participants ( $\chi^2=5.02$ ,  $df=4$ ,  $p=0.285$ ), thereby suggesting the representativeness of the sample. The highest educational level of most of the respondents is bachelor's degree (77.4%), whereas around 8.1% have postgraduate degrees. In terms of household income, those who receive RMB10,000 to RMB14,999 monthly comprise approximately 30.3% of the respondents. This respondent profile is similar to the monthly income structure of the population ( $\chi^2=11.01$ ,  $df=6$ ,  $p=0.088$ ). Hence, the survey sample could be treated as representative of Chinese travelers who choose guest houses due to the random rather than purposeful data collection process.

All 828 participants stayed in guest houses in the last 12 months. Most of the participants stayed in guest houses with family members (accounting for 68.60% of all), either with children (43.12%) or without children (25.48%). This percentage is pretty high compared with star hotels. Less than half of the respondents experienced guest house services alone (7.85%) or with their friends or colleagues (23.55%). The origin of the participants covered almost all 34 provinces or municipalities, which indicates wide geographical

representativeness; the places mentioned as sources of the participants were Guangdong (15.70%), Beijing (15.10%), Shanghai (12.92%), Zhejiang (6.76%), and Jiangsu (6.76%), which are the most developed areas in Mainland China and is similar to the geographical distribution of Chinese travelers.

The normality tests for the variables were conducted using SPSS. Factor analysis could be influenced by the distributional characteristics of the data, especially the departure from multivariate normality. If the data are not normally distributed, the chi-square statistics may be inflated and bias may exist in the key values that determine coefficient significance (Hair, Black, Babin, & Anderson, 2009). The Skewness and Kurtosis values were equal to 0 for the data that satisfy standard normal distribution. Nevertheless, the Skewness and Kurtosis values ranging from -1 to +1 could be considered approximate normal distribution. Values that fall outside the range of -1.50 to +1.50 indicate a substantially skewed or kurtic distribution (Hair et al., 2009). The Skewness and Kurtosis of most of the variables were higher than -1.50 and lower than 1.50. Only two variables (“Appropriate water temperature” and “Clean and tidy in bathrooms”) had kurtosis values slightly higher than 1.5. Thus, the data were regarded as approximately normal distribution. Further testing with Kolmogorov-Smirnov and Shapiro-Wilk indicated the same conclusion, that is, data were approximately normally distributed ( $df=828$ ,  $p<0.001$ ). These normality tests provided the basis for further analysis by AMOS 20.0.

Survey data were randomly split into two groups using random function in SPSS. The first group was used as calibration sample and the second group was treated as validation sample. Exploratory factor analysis (EFA) was conducted based on the calibration sample to identify latent factors and ensure the effectiveness of the measurement scale. Next, confirmatory

factor analysis (CFA) was performed using validation sample to determine the overall fit of the proposed measurement model and the reliability and validity of the measurement scale.

## **4. Findings**

### ***4.1 Measurement Refinement Based on EFA***

EFA was conducted using the calibration sample (n=414). Principal axis factoring was employed given that this method was suitable for research aiming at latent factor identification and measurement item reduction (Kline, 2015). Varimax rotation was performed to refine the scale because the correlations between the derived factors were higher than 0.2 based on promax rotation (Field, 2013). The Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy was equal to 0.924, and Bartlett’s test of sphericity indicated significance ( $P < 0.001$ ). Thus, the data were suitable for analysis using EFA (Field, 2013).

Items were refined based on the following criterion: a) items with factor loadings lower than 0.4 were removed; b) items with cross loadings were omitted, wherein one item was loaded on two factors with both loadings higher than 0.4; c) removing an item would not significantly reduce the reliability of the scale, which could be judged using the “Cronbach’s  $\alpha$  if item was deleted” values and the internal reliability of the factors (Field, 2013). The authors removed one item with low factor loading or cross loading (Criteria a and then Criteria b). EFA was run once until each item was highly attached to one factor.

Twenty-five items were retained after measurement refinement. The EFA results indicated that five factors were identified (Table 1) with eigenvalues higher than 1.0 and factor loadings higher than 0.450. The five factors explained 58.677% of the variances higher than the minimum 50% (Hair et al., 2009); all factors had Cronbach’s  $\alpha$  values higher than 0.7.

(Insert Table 1 here)

The first factor explains 34.973% of the variances and has high reliability with  $\alpha$  value of 0.857 and mean of factor loadings (MFL) of 0.611. The seven items pertain to guest house cleanliness and sanitation. Thus, this factor is labeled “Sanitary.” Factor 2 explains 7.404% of the variances, with high reliability and validity ( $\alpha=0.800$ , MFL=0.546). Based on the seven items loaded on this factor, this factor is labeled “Service and Climate.” The facilities of guest rooms are also an important aspect that guests evaluate, which are reflected in the five items loaded on Factor 3. Thus, Factor 3 is called “Room Facilities,” which explains 6.754% of the variances. The internal reliability of this factor is acceptable ( $\alpha=0.827$ , MFL=0.595). Three items are loaded on Factor 4, which also has high reliability and validity because of the high factor loadings (mean=0.660) and  $\alpha$  value (0.779). This factor explains the demand of customers for “Shower.” The fifth factor explains 4.102% of the variances, with  $\alpha$  value (=0.792) higher than the cut-off point 0.7. This factor is called “Bed,” which describes the core needs of guest house customers for bedding to have a good night’s sleep.

#### ***4.2 Reliability and Validity Assessment via CFA***

Reliability describes the ability of the measure to produce the same results under the same conditions (Hair et al., 2009). Cronbach’s  $\alpha$  was adopted to assess construct reliability in the present study. By contrast, validity refers to the extent to which the content of measurement corresponds to the construct that it was designed to cover without any systematic or nonrandom error (Hair et al., 2009). Convergent validity and discriminant validity were analyzed via CFA (Churchill, 1979). The former refers to the extent to which two measures of the same construct are correlated (Hair et al., 2009). The value of average variance



extracted (AVE), which estimates the overall amount of variance explained by a construct in relation to the variance resulting from the measurement error, was adopted to measure the convergent validity of the measurements (Fornell & Larcker, 1981). A rule of thumb for this type of validity test is that the AVE values of all the factors/constructs should be higher than 0.5 (Fornell & Larcker, 1981). Factor loadings are also used for convergent validity, which should exceed 0.6 or at least 0.5 in exploratory studies (Hair et al., 2009). Discriminant validity describes the extent to which two similar factors/constructs are distinct (Hair et al., 2009) and considered acceptable when the square root of the AVE value of a factor/construct is higher than its correlation coefficients with other factors/constructs (Kline, 2015).

CFA was performed using AMOS 20.0 based on the validation sample (n=414) of the survey data. The model goodness-of-fit indices were listed as follows:  $\chi^2=615.1$ ,  $df=265$ ,  $\chi^2/df=2.321$ , comparative fit index (CFI) =0.930, Tucker–Lewis index (TLI) =0.921, and root mean square error of approximation (RMSEA) =0.057. As a rule of thumb, CFI and TLI should be higher than 0.90 for a good model fit, whereas RMSEA should be lower than 0.08 (acceptable fit) or 0.05 for good fit (Hair et al., 2009; Kline, 2015). The aforementioned model goodness-of-fit indices meet these criteria for CFA. Thus, the measurement model of functional congruity presented in Table 2 has acceptable data fit.

The measurement model results are listed in Tables 2 and 3. All factor loadings are higher than 0.5 and all  $\alpha$  values of the five factors exceed 0.7, which indicate high reliability. Three of the AVE values of the five factors are higher than 0.5 and two are lower than 0.5 (Sanitary:  $\alpha=0.863$ ; AVE=0.475; Service and Climate:  $\alpha=0.849$ ; AVE=0.447). The AVE values of the two factors are relatively low. Removing the items with low factor loadings, such as SC1 (“User-friendly service”), may accomplish valid requirements. The five factors of the

construct are accepted as valid considering the exploratory nature of this study because of high reliability (all  $\alpha$  values higher than 0.8) and high factor loadings (all higher than 0.6 except SC1) (Hair et al., 2009). The square root values of the AVE for almost all factors are higher than the correlation coefficients (Table 3), except for the correlation between factor “Room Facilities” and “Bed.” The square root values of AVE “Room Facilities” and “Bed” are very high (0.744, 0.795), but the correlation coefficient between the two factors are higher (0.826). Further analysis indicated that treating all the items of these two factors as one factor could solve this problem. The correlation coefficients are mostly between 0.552 and 0.666, which indicate proper relationships between the factors in the same construct and distinctions among different factors. The discriminant validity of the factors is basically supported.

The mean and standard deviation (SD) of the variables are presented in Table 2. All items have means higher than 5, which indicate agreement with the functional congruity statements. The coefficients of variation (=mean/SD) of the variables are between 0.16 and 0.25, which suggests that functional congruity moderately vary among different guest house customers. The means and SDs that summarize the distribution of scores are derived for “norm development,” which is the last step in the process suggested by Churchill (1979). This process also involves counting the percentage of each alternative (1 to 7) for all the variables/items by regarding them as weights, multiplying each alternative by its weight, and then calculating the sum (Churchill, 1979; Hair et al., 2009). These parameters are applicable to all participants to identify the norm of functional congruity (M=5.13, SD=1.58). The norm will be representative when the sample size (from which the norm of the measurement scale has been developed) is large (Churchill, 1979; Hair et al., 2009).

(Insert Tables 2 and 3 here)

## **5. Discussion and Implications**

The purpose of this study is to understand the dimensions of functional congruity of guest houses in Mainland China and develop a measurement scale. A modification of the procedure by Churchill (1979) involving three steps was applied for scale development. Various research methods, such as content analysis of online use-generated comments, focus group discussion, and survey, were adopted. As an exploratory research on functional congruity in Mainland China, sample items were created from content analysis of online user-generated comments and focus group discussion. A questionnaire was designed based on the items and data collection was conducted. The data collected online were divided into two groups. Calibration sample was used to test the clarity of the items and conduct initial item reduction. Factor analysis was performed to identify the latent factors of the construct. Refined measurement scale was confirmed via CFA using the validation sample. Construct reliability and validity were assessed based on the results.

The functional congruity of guest houses can be explained using five factors. “Sanitary” is one of the most important factors, accounting for more than one-third of variances. This factor explains the good conditions of the guest house environment (cleanliness and tidiness) from public areas to guest rooms or other areas or equipment that customers frequently use. Previous studies found that the sanitary conditions of hotels and functional image perceptions significantly affect the service quantity perceptions of customers (Chen & Chen, 2014; Khoo-Lattimore & Prayag, 2016). This study further revealed that sanitary is one of the most important dimensions of congruity in guest houses. The expectation of guests on services reflect their judgements on average quality of an accommodation, such as environment and atmosphere for the hotels that use websites to invite guests (Knutson, Beck, Kim, & Cha,

2009), and central sale/reservation systems for budget hotels (Brotherton, 2004). This study supplements the research on critical success factors for accommodation services from the expectation-disconfirmation paradigm (i.e., congruity), which may carry forward research on the guest house experiences of customers to some extent (Wang & Hung, 2015).

The second factor, namely, “Service and Climate,” also has high reliability and validity. This factor is similar to those found in previous studies on functional congruity (but labeling may differ). For large business or other types of hotels, service and climate factors, such as service attitude and efficiency, and home atmosphere, are critical for hotel performance and development (Chang, 2016; Chen & Chen, 2014). For specialist accommodation, software (service) is a vital factor that influences guest experiences (e.g., Wu & Yang, 2010; Jo et al., 2014). In particular, homeliness feel or atmosphere has gained significant attention regarding guest houses (e.g., Zane, 1997, as cited in Wu & Yang, 2010; Wang & Hung, 2015), which may be the most special characteristic compared with regular hotels. Climate in hotels (not organizational climate, e.g., Bellou & Andronikidis, 2009) received limited attention given its intangibility and difficulty in measurement. For hotels with local or ethnic cultural characteristics, climate is a significant factor that attracts customers and an indispensable component of services/products (Brotherton, 2004). The findings of the current study support the close interrelationships between service and climate, and the match of customers and guest houses in terms of service and climate has rich meanings in improving the assessment of customers on accommodation functions.

The other three factors include “Room Facilities,” “Shower,” and “Bed.” “Shower” and “Bed” are related to “Room Facilities.” However, according to the data in the current study, shower and bed are independent dimensions. This finding may attributed to the fact that the

development of the guest house industry in Mainland China remains in its early stage and the quality of hardware (facilities) varies. Given that taking a shower and having a good night's sleep are two basic utilitarian features, these two factors are identified as independent dimensions of functional congruity. In this study, "Shower" has high reliability, convergent validity, and discriminate validity. Similar to Zane (1997, as cited in Wu & Yang, 2010), 1,400 American B&B customer's distinguished comfort of bed as an important factor. In this study, "Bed" is also identified as a different factor of functional congruity regarding guest houses. However, these two factors could be integrated into one because of the high correlation coefficient between "Room Facilities" and "Bed." Additional data are needed and further research is necessary to determine if room facilities and bed are two separate dimensions of functional congruity.

The five aspects of functional congruity may have implications for guest house owners/managers who can develop accommodation products, services, and communication strategies to improve the service experience and satisfaction of customers. Hotel managers are concerned about ensuring the consistency of performance of hotel functions with the assessment or expectations of customers. As green development and environmental friendliness became a trend in hotel management (Han, Hsu, & Sheu, 2010), owners/managers should improve the sanitation of their guest houses through strategies, such as using standard operation procedures and training frontline employees. In addition, ambiance is an important part of services that hotels provide. Managers should create a positive experience (e.g., quiet environment, cozy atmosphere) to improve service quality. As a construct focusing on the utilitarian factors of guest houses, functional congruity highlights the role of facilities and equipment, such as room facilities, shower, and bed. These facilities should be well designed and managed based on the needs of customers.

The model fit of CFA in this study is excellent. The models are acceptable considering the exploratory nature of this study. The construct reliability of the factors is high. Most of the construct convergent validity and discriminant validity are confirmed and others could be improved. The factor “Sanitary” and “Service and Climate” can be purified given that the AVE values of these two factors are slightly lower than 0.5 (partly because of the high item numbers). Furthermore, given the correlation between “Room Facilities” and “Bed,” the discriminant validity of the two factors could be improved. Further research is needed to determine the necessity of separating bed from room facilities.

A measurement scale for functional congruity should be developed because the concept of functional congruity is based on the comparison between the performance actually received by customers and their desired ones, which is often neglected. This study is a stepping stone to further investigations on the role of functional congruity in travel decision-making, guest satisfaction, and repurchase intention. The measure developed in this study should also be validated in other regions of China and other countries.

## **6. Limitations and Future Research**

This study was an attempt to develop a measurement scale for functional congruity regarding guest houses, which could be a timely contribution to functional congruity and specialist accommodation literature. This study is subject to some limitations. First, an online panel survey was conducted to collect quantitative data, but online panel may not represent the population of guest house customers because those who have not registered with online panel companies or have no Internet access and computer skills were excluded. Future research can

collect additional data using other methods, such as telephone survey and traditional paper-based questionnaires, to further validate or enhance the measurement.

Second, the correlation between the factors “Room Facilities” and “Bed” is high in this study. The discriminate validity of the two factors could be improved. Thus, additional data should be used to test the measurement scale, and further research is needed to see if it is necessary to separate “Bed” from “Room Facilities.”

Finally, the Likert scale design applied in this study followed the one used in most tourism studies (Dolnicar & Grün, 2013). However, when a functional congruity item is inapplicable to a respondent, he or she may choose “strongly disagree” because “not applicable” is not provided among the choices. The possible influence of this result on the reliability and validity of the measurement remains unknown. Future research can consider the influence of different Likert scales (e.g., seven-point scale, five-point scale, and the availability of “not applicable” as an option) on the performance of the measurement scale. These comparisons will provide insights into functional congruity research and hospitality management studies because of the importance of the questionnaire design in tourism and hospitality research.

## **Appendix**

## Online Panel Survey on Customers' Experiences of Guest Houses

### Information:

Thank you for participating in this survey. This study aims to understand the guest house experiences of customers in tourism destinations (e.g., Lijiang, Fenghuang, Kulangsu). A guest house is “*a small-scale accommodation that is privately owned and gives importance to the operator’s personal contact and hospitality skills.*” This study will aid in understanding of the guest house experiences of customers and promote the development of the industry. The results of the survey will be exclusively used for academic research.

The study focuses on Chinese citizens 16 years old or beyond, and will require approximately 10 minutes to complete. Participation in this study is completely voluntary and participants may withdraw at any time. We will discard your answers if you decide to discontinue in the middle of the survey and your identity will remain completely confidential. By participating in this survey, you confirm that you have read and understood the information provided above and that you are giving us consent to publish the information obtained from this study.

### Screening question:

Have you stayed in a guest house in the last 12 months?

- Yes       No (Stop the survey)

### Section I. Travel behavior

How did you stay in the guest house?

- By myself       With my family (without children)  
 With my family (with children)       With my friends or colleagues

### Section II. Functional congruity



The desired expectations of guest houses are expressed below. Please recall your latest experience of staying in a guest house and indicate your agreement with the items.

	<i>Strongly Disagree</i>			<i>Neutral</i>		<i>Strongly Agree</i>	
	1	2	3	4	5	6	7
<b>Comparing your experience with the normative (i.e., most desired) expectations of guest houses</b>							
1. Comfortable bed							
2. Appropriate mattress							
3. Comfortable beddings							
4. Spacious room							
5. Exquisite decoration							
6. Effective sound insulation							
7. Safe door							
8. Good quality toilet facilities							
9. Sufficient hot-water with quick outlet							
10. Appropriate water temperature							
11. Appropriate water pressure							
12. Fast drain in the bathroom							
13. Having household electrical appliances (e.g., air-condition, humidifier, television)							
14. Good ventilation effect in the room							
15. Good privacy of the bathroom in the room (e.g., having a door for the bathroom)							
16. Convenience for drying clothes							
17. Big public area (e.g., courtyard)							
18. Good television signal							
19. Diversification of payment (e.g., can use credit cards or Alipay)							
20. Clean and tidy in public areas							
21. Clean and tidy in guest rooms							
22. Clean and tidy in bathrooms							

23. Clean towel							
24. No peculiar smell							
25. Clean beddings							
26. No mosquitoes/ants/roaches/mice							
27. Full service (e.g., providing airport pick-up service)							
28. User-friendly service (e.g., no charges for reservation cancellation, no charges for keeping luggage temporarily at concierge)							
29. Good service attitude							
30. Proper enthusiastic service							
31. Honest business (e.g., no more charges when checking out, the room arranged is the same as the booked one/online picture of it)							
32. Efficient room cleaning service							
33. Efficient service when needed							
34. The host manages the staff well							
35. The host/staff maintains good public order							
36. Quiet environment							
37. Sufficient sunlight							
38. Close to main tourist attractions							
39. Convenient transportation							
40. Enthusiastic host							
41. Home atmosphere							
42. Good communication and interaction with host/staff							

**Section III. Personal information (completely confidential)**

1. Are you?     Male             Female
2. How old are you? (\_\_\_\_\_)
3. Which province and city are you living in? (\_\_\_\_\_)

4. What is the highest level of formal education you have completed?

- No formal education       Primary school       High school
- Associate degree       Bachelor's degree       Postgraduate degree

5. What is your marital status?

- Single, Never Married       Married       Divorced
- Separated       Widowed

6. What was your approximate total household income last year?

- Less than RMB3,000       RMB3,000 to RMB4,999       RMB5,000 to RMB7,999
- RMB8,000 to RMB9,999       RMB10,000 to RMB14,999
- RMB15,000 to RMB19,999       RMB20,000 or more

***Thank you very much for your participation!***

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