

# SERVICE QUALITY MEASUREMENT IN INDIAN HOTELS: FACTOR STRUCTURE & SCALE VALIDATION

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## ABSTRACT

With the rapid growth of hospitality industry, many hoteliers have developed their online capabilities and evolved into competitive dual-channel service providers. In such a case, strategic consumers have more options to book a hotel enabling them to choose the best time and the best channel. This study aims at measuring service quality being offered by traditional hotels in Allahabad with the help of SERVPERF model. Besides, it also attempts to investigate the dimensionality, item structure and psychometric properties of the SERVPERF scale in Indian hotel industry.

Findings reveal that SERVPERF scale fails to hold all the original items and hence, fails to confirm the standard item assemblage within the backdrop of hotel industry. In all, seven dimensions have emerged contrary to the original five-dimensions namely-tangibles, assurance, reliability, responsiveness and empathy. Besides this, there were also a number of considerable issues which form the basis for the current research. The outcome of the current study will be of help to managers of Indian hotel industry to analyze their service offerings with reference to the suggested seven key factors and accordingly develop strategies to highlight and prioritize them.

**Keywords:** *Service Quality, Hotel, Scale Validation, Tourism, SERVPERF*

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## 1. INTRODUCTION

The rapid development and growth of service sector in recent years has provided hotels with a great number of attractive marketing opportunities. Planning Commission (2014) highlights that Indian service sector is considered as the driver for country's fast economic growth. Tourism and Hospitality is the second most performing industry in India contributing more than 13.5% to the overall service sector (Planning Commission, 2014) and is expected to achieve a growth of 16.1% CAGR to reach 2796.9 thousand crore (INR) by 2022 (KPMG, 2017).

India is a wide service market for travel & tourism offering not only varied portfolio of niche tourism products of tourism but also it has been recognized as a spiritual and standard medical destination for rest of the world. The Indian hotel industry experienced a strong progress driven by the substantial inflow of foreign visitors as well as the domestic tourist movement across the country during the last few years. According to the Economic Survey Report (2016-17) the influx of foreign tourist during 2016 was 8.90 million marking an increase of 10.70 percent while foreign exchange earnings (FEE) stood at US\$ 23.10 billion, obtaining a growth rate of 9.80% than previous years.

The concept of service quality has been a topical subject for service industry as it is linked to satisfaction, loyalty and profitability (Zeithaml, 2000; Ladhari et al., Cronin, 2003). Superior service quality leads to increased customer satisfaction, customer retention, market share, return on investment (ROI), enhanced profitability and sustainable competitive advantage (Han et al., 2008; Gagnon and Roh, 2008; Gonzalez and Brea, 2005; Wilkins et al., 2010). The significance of quality of service to the economic performance of the service trades has been well recognized, particularly in the hotel industry (Eccles and Durand, 1997; Mei et al., 1999; Kandampully and Suhartanto, 2000; Tsang and Qu, 2000; Campos-Soria et al., 2005; Wilkins et al., 2007; Mmutle and Shonhe, 2017; Tefera and Govender, 2017). Considering hotel development as an integral part of India's tourism development, it was given priority by the government. Moreover, increase in number of middle class people, better connectivity, youth mobilization, government initiatives towards tourist promotion like Incredible India, Athithi Devo Bhava and others further pushed the demand for the requirement of the hotels.

In spite of the overdevelopment of hotels in India, some articles (Patrick, 2013; Kashyap, 2014; Grover, 2015; India Today, 2016) found that the standard and quality of services provided by the hotels were still far below international standards. Problems included poor language ability and communication skills, a lack of property maintenance, poor transportation facility, improper marketing effort, unreliable reservations system, security challenges and poor sanitation. The cultural and socio-economic differences amongst Indians lead to a discrepancy in expectation of service quality and actual services offered by the service provider.

For the purpose of reinforcing the management of these hotels, and to raise service quality so that hotels can match the international standards, the past researchers have provided a number of monitoring and evaluation measures to standardize the service offerings. Application of those measures has demonstrated the commitment of service workers to render consistent and excellent services to its tourists. Although, a number of recent studies have attempted to measure service quality in different industries (Spathis, Petridou and Glaveli, 2004; Keiningham et al., 2007; Gruber, Szmigin and Voss, 2009; Chen et al., 2010; Rood and Dziadkowiec, 2013; Adil et al., 2013a; Adil and Khan, 2012; Aflaki and Popescu, 2013), but researches on budgeted hotels in India has largely been ignored. Thus, to fill this gap, the present research attempts to test the applicability of original SERVPERF scale together with investigation of dimensionality, item structure and psychometric properties of the scale (Cronin and Taylor, 1992) in Indian context.

This paper is structured as follows: a) next section presents a review of the existing body of literature related to service quality, measures and varied service quality models, b) next section focuses on research methodology c) this section on data analysis focuses on empirical test of inter-item consistencies and psychometric properties of original SERVPERF scale at Indian hotel industry, d) lastly, this section dwells upon conclusions, managerial implication, limitations and suggestions for future research.

## 2 LITERATURE REVIEW

### 2.1 Service quality definition

Multitudinous attempts were made to define service quality in the past and accordingly researchers attempted to propose key dimensions. For instance, Parasuraman et al. (1985) define service quality as "...a difference of service expectation and service perception leading to a gap". Later, Cronin and Taylor (1992) explain 'service quality' as "service performance measurement rather on expectation and perception by customer". Eventually, Lehtinen and Lehtinen (1982) propose that two key dimensions of service quality are 'process quality' and 'output quality'. Similarly, Gronroos (1984) suggests that two key factors of service quality are functional quality and technical quality. It is evident from review of literature that there has been disagreement amongst researchers related to the definition, item structure, dimensionality and measures of service quality.

**Table 1:** Select Studies on Service Quality in Hotels

<i>Authors Name</i>	<i>Sample</i>	<i>No of Original items used</i>	<i>No of Final item retain</i>	<i>Data Analysis Procedure(s) EFA or CFA</i>	<i>Dimensions</i>
<b>Oberai and Hales. (1990)</b>	133 hotel conference users	54 items attributes Four point Scale	23	NA	Two dimensions: functional attributes (12) and Technical (11).
<b>Saleh and Ryan (1991)</b>	200 hotel guests (HG), 17 managerial staff(MS)	33 items five point scale	32 (HG) 33(MS)	EFA	<b>Four Dimensions:</b> (HG): tangibles & reliability (10), responsiveness (8), assurance (8), and empathy (6). <b>Five dimensions (MS):</b> tangibles (7), reliability (3), responsiveness (8), assurance (8) and empathy (7).
<b>Akan (1995)</b>	228 users of Turkish Five and four star Hotels	30 items four point scale	NA	EFA	<b>Seven Dimensions:</b> Courtesy and competence of personnel, communications and transactions, tangibles ,knowing & understanding customers, accuracy and speed of service, solutions to problems and accuracy to reservations
<b>Ekinci at al.,(1998)</b>	112 Turkish resort users	38 items seven point scale	16 items	CFA	<b>Two Dimensions:</b> Tangibles (5) and intangibles (11).
<b>Choi and Chu, (2001)</b>	432 International traveller	33 items seven point scale	29	EFA	<b>Seven dimensions:</b> Staff service quality (7), room quality (4), general amenities (7), business service (3), value (4), securities (3) and IDD facilities (1)
<b>Khan (2003)</b>	324 eco tourist living in the USA	30 items seven point scale	29	EFA	<b>Six Dimensions:</b> eco-tangibles (3), assurance (5), reliability (5), responsiveness (4), empathy (4) and tangibles (8)
<b>Nadiri and Hussain (2005)</b>	285 European guests of four star five star hotels and resort	22 items five point scale	22	EFA	<b>Two Dimensions:</b> Tangibles (4) and Intangibles (8)

<b>Akbaba (2006)</b>	234 business guests	29 items five point scale	25	EFA	<b>Five Dimensions:</b> tangibles (6), adequacy in service supply (7), understanding and caring(5), assurance (4), convenience (3)
<b>Schofield and Katics (2006)</b>	167 hotel services users	31 attributes seven point scale	28	EFA	<b>Five Dimensions:</b> Technical service quality(13), technological convenience (4), functional service quality (6), technological product attributes (2), service environment (3)
<b>Albacete-Saez et al. (2007)</b>	172 rural service accomodation users	58 items Seven point scale	21	EFA & CFA	<b>Five Dimensions:</b> Personal response (7), complimentary offer (2), tourist relation (5), tangible element(5), empathy (2)
<b>Wilkins et al.(2007)</b>	664 users of four and five star hotels	63 items	30	EFA & CFA	<b>Three Dimensions:</b> Physical product, service experience and quality food and beverage. <b>Seven sub dimensions:</b> Quality staff (5), stylish comfort (5), personalization (4), room quality (4), speedy service(4), added extras (4), and quality food and beverage (4)
<b>Liu and Arendt (2016)</b>	388 employees with student status	22 items	22	CFA	<b>Four Dimensions:</b> Job itself (6), Need for achievement (6), Nced for affiliation (5), and Need for power (5)
<b>Kamboj and Rehman (2016)</b>	388 student 354 hotel guests	18 items	9 items	EFA & CFA	<b>Three Dimensions:</b> Informational (3), Actionable (3) and Attitudinal (3)

Source: Prepared by researchers

## 2.2 Perspectives on service quality performance measurement

Revolution brought with the advent of information technology and communication, late 20th century has witnessed a rapid transition of economy from industrialization to service especially in select developed and emerging economies of the world. Researchers suggest that service sector plays a key role in the development and growth of country's overall economy. This swift shift in paradigm had encouraged many researchers to devote a valuable contribution in service marketing especially in the field of developing scale for service quality measurement and validation. A number of measuring scale & model have been developed to measure the quality of service— for eg. SERVQUAL ( Parasuraman et al., 1985); SERVPERF (Cronin and Taylor, 1992); RSQS (Dabholkar et al., 1996) etc. However, owing to the limitation of SERVQUAL scale, SERVPERF (Cronin & Taylor, 1992) scale has been widely used in service literature.

### 1. METHOD

#### 1.1 Objective

The present study has the following prime objectives:

- To examine the reliability and validity of the original SERVPERF scale in Indian hotel industry.
- To investigate the factor structure of Cronin and Taylor's performance model measure (SERVPERF) in Indian hotel industry.
- To validate the item structure and dimensionality of the obtained performance model measure in Indian hotel industry.
- To test statistically the psychometric properties of the original SERVPERF scale.

#### 3.2 Study population and sample

The interest respondents for the current study comprises of those who have prior experience of staying

in budgeted hotel in Uttar Pradesh. The rationale behind selection of budgeted hotels under the present study is that it dominates the hotel industry by serving to maximum number of people during a stated period of time. We chose Allahabad district as a place of study for the following reasons: a) most populous city of Uttar Pradesh (Census Report, 2011), b) spiritual tourist destination (Kumbh Mela), c) most visited city of Uttar Pradesh by domestic tourists in 2016 (U.P city wise Statistics, 2017), d) educational hub for a long time and e) privileged to have a number of government and quasi-government departments like (A.G. office, Uttar Pradesh Public Service Commission (UPPSC), High Court, Higher Education Board, Universities, private and government owned technical institutes. Thus, it can be considered as a representative of a population for the purpose of the study.

### **Questionnaire development and pilot study**

Following the suggestions of Adil et al. (2013a, b), survey method was adopted to examine the service quality at hotels in Indian context. Review of the existing literature on service quality in Indian perspective (Adil et al., 2013a; Ullah and Adil, 2014; Adil et al., 2015; Ullah and Adil, 2016), led the researchers to consider Cronin and Taylor's (1992) service performance model for the present study. Thus, service quality at Indian hotels has been measured through 22-item SERVPERF scale having an expanded list of Five key dimensions namely—'tangibles' (04 items), 'assurance' (04 items), 'responsiveness' (04 items), 'reliability' (05 items), and 'empathy' (05 items).

As the present study is based on quantitative methodology and hence, a structured, closed ended questionnaire in English was employed as a research tool for collection of data. First, the research tool was handed over to three subject experts for examination in terms of its layout, content, structure etc. The instrument consists of two important sections—first set contained statements related to demographic profile of the respondent while the second set had items related to the original service performance scale (Cronin & Taylor, 1992).

A five-point Likert scale anchored as 1='strongly disagree' to 5='strongly agree' employed to assess the participants degree of agreement with the statements. A pretest was conducted on five managers and ten guests belonging to budgeted hotels. This led to refinement and rephrasing of the statements. Consequently, 38 guests staying at Allahabad budgeted hotels were contacted for pilot test. Taking into account the feedback received during pilot study and pretest, items were suitably re-phrased to make it better fit in Indian context. As suggested by Nunnally (1978) each dimensions met the Cronbach's alpha value standard of 0.7, as the result obtained from pilot study.

### **3.4 Data collection**

To collect the data from the targeted sample, first we logged into the official website of IRCTC Tourism (A Government of India Enterprises) and filtered our choice to budget hotels in Allahabad city. The website provided us names and contact details of eleven hotels. Next, we contacted the reception of these select hotels through phones to seek an appointment for a brief meeting. Of these, only five contact numbers were found to be valid wherein in person meeting was requested by the dealing personnel. We decided to visit all the eleven hotels as they all were in the prime locations, in vicinity to Allahabad Railway Junction, Allahabad High Court, Civil Lines and Sangam area. Next we visited these eleven budget hotels to meet the proprietors/managers/care takers and sought their permission to include their hotel as a part of this survey. The meeting ranges from 10 to 20 minutes. From eleven, only 8 hotels agreed to be a part of this survey with a condition of not to approach the guests in their personal rooms, while rest three managers/proprietors politely declined our request.

**Table 2:** Demographic Profile of Respondents

Variable		N=183	Percent
Gender	Male	103	56.28
	Female	80	43.72
Age	18-25	17	09.29
	26-30	29	15.84
	31-35	32	17.49
	36-40	39	21.31
	41-45	36	19.68
	45 & Above	30	16.39
Occupation	Student	19	10.39
	Business	71	38.79
	Service	60	32.79
	Self Employed	33	18.03
Marital Status	Married	73	39.89
	Single	106	57.92
	Divorcee	01	00.55
	Other	03	01.64

With prior approval from the authorities, guests were approached at different public places like waiting lounge, hotel's own restaurant/dining hall, common room etc. We adopted a non-random purposive sampling technique in this research (Khan and Adil, 2013). Initially 250 questionnaires were handed to guests of which 188 were returned, with only 183 found completed in all respect, giving a response rate of 73.2%. Consistent with the suggestions from extant literature (Adil et al., 2013 a,b; Adil et al., 2015; Ullah and Adil, 2016), respondents were approached at different day at different hours. This resulted in a well-represented demographic sample.

The survey instrument captured the demographic data of targeted respondents (see Table 2). Of the 183 respondents, 56.28% were male; respondent relatively represent 58.48% between the age of 31–45 years. In terms of marital status, about 57.92% were single. More than 38% of the respondents were belonging to business.

## 4 DATA ANALYSIS AND INTERPRETATION

### 4.1 Preliminary Analysis

The internal consistency of the SERVPERF scale has been done using Cronbach's alpha ( $\alpha$ ) while face validity by expert opinion. The key evidence of SERVPERF's construct validity comes from studies that have actually employed it (Adil and Khan, 2011; Adil, 2012; Khan and Adil, 2013; Adil et al., 2015; Juned and Adil, 2016; Ullah and Adil, 2016).

It forms a primary component, of perceived service quality measurement system. This has also been proved empirically that the validity of the 22 individual performance scale items explain more of the variation while measuring service quality than does other measures (Cronin & Taylor, 1992). Though, the SERVPERF is a standard measure, it might show different results in different settings. The number of dimensions that might emerge, are often sample specific (Dunlup et al., 2000, Khan et al., 2012, Khan et al., 2013). Thus, there is an urgent need to test the item and factor structure of the original SERVPERF scale at Indian budgeted hotels.

**Item reduction & Factor Analysis**

Exploratory factor analysis (EFA) is a statistical method that describes variability in observed variables and correlate variables in terms of potentially lower number unobserved variables called factors. Extant literatures show that there is a lack of consensus among researchers vis-a-vis. number of dimensions that emerge from the performance model (Cronin and Taylor, 1992). It is also found in the previous studies that the scale items which define service quality in one industry may not be same for every industry (Masoud & Omid, 2012).

Due to the lack of a commonly accepted or widely agreed scale exploration and validation procedure, the researchers in the present study combined an exploratory process along with confirmatory factor analysis (CFA) approach in order to reduce the ambiguity. EFA was conducted using SPSS 24.0. The analysis was carried out by means of principal component analysis (PCA) with varimax rotation. The seven dimensions explored were, thus, chosen for Bartlett’s test of sphericity and Kaiser- Meyer-Olkin (KMO) measure of sampling sufficiency, see Table 3.

**Table 3:** Results of EFA

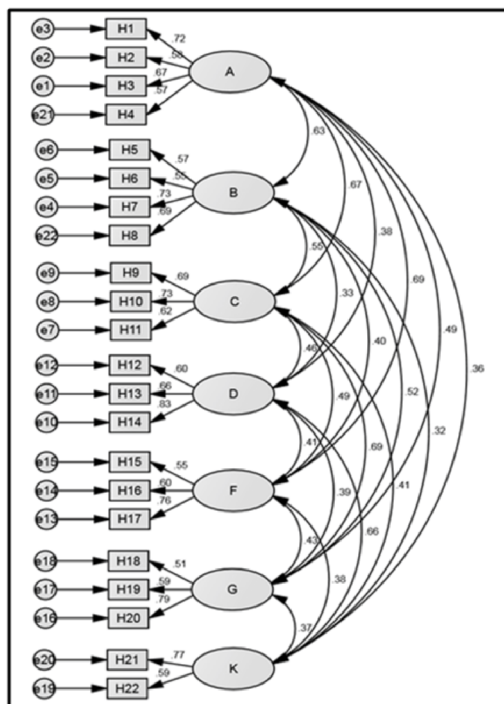
<i>Variables</i>	<i>Code</i>	<i>KMO Value</i>	<i>Factor Loading</i>	<i>α</i>	<i>TVE (in %)</i>
Reliability	H1	.697	.785	.723	55.086
	H2		.760		
	H3		.747		
	H4		.672		
Responsiveness	H5	.745	.679	.726	54.966
	H6		.677		
	H7		.797		
	H8		.802		
Tangible	H9	.669	.789	.717	63.896
	H10		.833		
	H11		.775		
Assurance	H12	.679	.782	.738	66.781
	H13		.850		
	H14		.818		

Variables	Code	KMO Value	Factor Loading	$\alpha$	TVE (in %)
Personal Care	H15	.658	.743	.676	60.779
	H16		.802		
	H17		.793		
Convenience	H18	.649	.729	.666	60.154
	H19		.786		
	H20		.810		
Amenities	H21	.500	.853	.627	72.835
	H22		.853		

Note: TVE: Total Variance Explained;  $\alpha$ : Chronbach's Alpha

The explored dimensions represented 65.153% of the total variance of the variables. The first & second factor, “reliability” and “responsiveness” consists of four items each i.e. (H1-H4 and H5-H8) each having a value of  $\alpha=0.723$  and  $\alpha=0.726$ . The third, fourth, fifth and sixth factor i.e. “tangibles”, “assurance”, “personal care” and “convenience”, were loaded with three items respectively (i.e. H9-H11, H12-H14, H15-H17, and H18-H20), each having a value of  $\alpha=0.717$ ,  $\alpha=0.738$ ,  $\alpha=0.676$  and  $\alpha=0.666$ . The last i.e. seventh factor “amenities” consists of two variables i.e. H21 and H22 having  $\alpha$  value as 0.627. The “assurance” factor was loaded with highest  $\alpha$  value of 0.738 while “amenities” had lowest  $\alpha$  value of 0.627. The first factor i.e. reliability explained the maximum TVE of 27.33%.

Figure 2 Results of Measurement Model



Note:  
A= Reliability,  
B=Responsiveness,  
C=Tangibles,  
D=Assurance,  
F=Personal care,  
G= Convenience,  
K=amenities



### 4.3 Measurement Model

The confirmatory factor analysis (CFA) is recommended by ( Lee,2008), in order to overcome the inherent limitations of the EFA i.e interpretation of results is limited by the subjectivity in which ‘factor loadings’, ‘cross–factor loadings’, and factor independence are assessed. In terms of measurement model assessment, the current study uses the methodology recommended by Gerbing and Anderson (1988). We have used IBM AMOS 24.0 version to confirm the seven dimensional performance model through CFA. The items loading to each dimensions were specified, followed by fitness of model.

Table 4 contains an overall summary of the key fit statistics for the seven dimensional measurement model (Figure 2). The fit indices for the proposed model were found to be good fit. The GFI and AGFI value are found to be considerable, minimum is 0.90, and ranges from 0.897to 0.912. The CFI value is satisfactory 0.927, CMIN/df value 1.725, RMSEA 0.061. Hence, the overall model fit indices revealed that all the goodness-of-fit measures were found within acceptable threshold.

**Table 4** Summary of Fit Statistics

Fit Indicators	Threshold	Observed Value
CMIN/df	< 3 good; < 5 sometimes permissible	1.725
GFI	> .95	0.912
AGFI	> .90	0.897
CFI	>0.95 great; >0.90 traditional; >0.80 sometimes permissible	0.927
RMSEA	<0 .05 Good; 0.05-.10 Moderate; >0.10 Bad	0.061

**Table 5** Measurement model

Factors	No. of Items	CR	AVE	$\alpha$	Factor Loading
Reliability	04	0.894	0.551	0.723	0.627-0.785
Responsiveness	04	0.893	0.549	0.726	0.677-0.802
Tangibility	03	0.905	0.639	0.717	0.775-0.833
Assurance	03	0.795	0.667	0.738	0.785-0.850
Personal care	03	0.892	0.608	0.676	0.743-0.802
Convenience	03	0.889	0.601	0.666	0.729-0.810
Amenities	02	0.908	0.727	0.627	0.853-0.853

**Note:** CR = Composite Reliability; AVE = Average Variance Extracted;  $\alpha$  = Cronbach’s alpha

Hence, against five dimensional structures, the seven dimensional model was found to be best possible fit and more robust in Indian hotel context and can be concluded that the original SERVPERF has strong psychometric properties.

The measurement model was further tested for convergent and discriminant validity. Convergent validity is the degree to which various items used to measure the same concept are in agreement. To assess convergent validity, Factor loadings, Composite reliability (CR) & AVE were also calculated

(Hair et al., 1998). The suggested values for loadings are set at  $>0.05$ , the AVE should be  $>0.05$  and CR should be  $>0.7$ . The results of measurement model (Table 5) exhibits that the results exceeded the recommended values, thus indicating sufficient convergence and discriminant validity for each construct.

## 5 CONCLUSIONS & MANAGERIAL IMPLICATIONS

In today's time, service quality is one of the most important codes or passwords when managing for high performance and competitive advantage. Hotel customers want quality whether they receive a service or buy a food (Gbenga and Osotimehin, 2015). The results of present research shows that customers attribute service quality concept to include aspects such as—hygiene room, timely service and employees' positive attitude. These are some of the top traits of service quality expected by most customers.

Further, the desired attributes of service quality are '24x7 wi-fi connectivity', 'regular service evaluation', 'good quality food and beverage services', 'proper caring of the guests' and 'good customer relations'. The employees of the hotel consider service quality as a good employee attitude, hygienic conditions, caring for guests and making sure that every individual gets good attention, good communication skills and striving to meet customer expectations in line with world class paramount standards.

Results of the present study offer a number of implications for hotel managers measuring service quality. Advances in tourism industry lead to rapid growth in the number of hotels in the country. Therefore, it is critical for hotels to address the service quality issue of customers. Our replication and cross-validation of SERVPERF scale uncover evidences that five key factors does not hold true in the context of an emerging economy like India. Two additional dimensions namely convenience and amenities have been emerged while the third dimensions namely empathy has been re-worded to personal care to make it fit according to the Indian context.

Thus, managers at Indian hotels may adopt the seven key factors of service quality and attempt to continuously evaluate the expectations of their customers and actual service being offered by them. This may avoid instances of customer dissatisfaction or frustration and, thereby enhances satisfaction, boosts repeat purchases and positive word of mouth. Customer feedbacks are vital and should be collected periodically for continuous improvement of quality. Hotel staffs must be aware of the seven dimensions of service quality and take a proactive approach to reinforce positive service quality drivers and reduce inhibition. Eventually, this may lead to more acceptance, comfort, and confidence, ultimately nurturing a positive attitude towards the hotel.

## 6 LIMITATION & FUTURE SCOPE

- Although researchers have tried their best to adopt measures to make the sample as best representatives as possible, it is be noted that it may not be a true representation of the population. Since India is a nation of rich & diverse cultures & vast geographic spread, the results might differ elsewhere. Thus, steps to be taken by future researchers to include more areas and decide on sampling procedures, which are better representatives so that study finding can be generalized.
- The study also suffers from an urban biasness as respondents were residing in urban areas and does not take into account off located budget hotels. As the majority of Indian population resides in rural area. It is important to measures their opinion too. Thus, future researchers need to also include rural budget hotels too.
- Possibility of biasness in response cannot be ignored; it might be possible that the respondents

gave replies that were desirables from their point of view. Some of the researcher may also have given responses desirables from the point view of researcher. Future research need to take steps to eliminate such biasness affecting the study finding.

- Further, the fact that the budget hotels at Allahabad may have unidentified differentiating characteristics from other markets, generate concern. Thus, one must guard against generalizations of the research findings.

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