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The Role of Service Quality, Involvement and Customer Satisfaction in Green Hotel Industry: Assessment of Structural Model and IPMA Analysis

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Abstract— this study proposed the linkages between service quality, involvement and customer satisfaction towards green hotel industry. This study employed a cross-sectional study design by using a set of questionnaires as the instruments for measuring the targeted constructs. An empirical assessment of the theoretical framework for this study included a survey of 317 certified green hotel guests in Malaysia. The resulting data were analyzed using the PLS-SEM and IPMA analyses using the SmartPLS 3.0 software. The findings suggested that service quality, and involvement has a positive significant impact towards customer satisfaction. Besides that, service quality was also having a positive significant impact toward involvement. In addition, involvement gives a partial mediating effect toward the relationship of service quality and customer satisfaction by testing the indirect effect. The analysis also supported by the IPMA analysis, where service quality plays a vital role to increase customer satisfaction as compare to the role of involvement. Thus, this study contributed to service quality and marketing literature by adding new empirical evidence on the direct and indirect relationship between service quality, involvement and customer satisfaction.

Keywords— *service quality, customer satisfaction, involvement, green hotel, PLS-SEM, IPMA*

1.   Introduction

No doubt, rapid growth of environmental awareness in hotel industry has become prevalence in developing country such as Malaysia. The Malaysian government has been promoting many environmental protection policies [1]. This trend has leads to adoption of higher level of green practices in the Malaysian hotel industry which enable the industry to become more competitive.

In order to keep up with the intense competition in the industry, green hotels should make sure they deliver superior quality of service [2, 3]. A good understanding of the service quality model in green hotel industry is crucial in ensuring high level of green involvement among customers thus promoting tourism sustainable development. Linkages between service quality, involvement and customer satisfaction in green hotels is important to help preserve the ecosystem, environment

sustainability and other favourable quality of life effects. This study aims to examine the influence of service quality towards customer satisfaction and to examine the mediating role of involvement within the linkages.

2.   Literature Review

2.1   Service Quality

Service quality has been proved as an important aspect in many industries as it helps a company enhance its profits and also satisfy and retain customers. Excellent service quality is needed for businesses to become prevalence, therefore research on the measurement of and improvement of service quality, has become essential [4]. Numerous studies of service quality in hotel industry and its consequences have been done since it is a way to build and create a competitive advantage for a company [5]. However, in-depth understanding of service quality concepts is still in its fancy. Thus, this study tested five service quality variables namely: reliability, responsiveness, assurance, empathy and tangibles.

2.2   Involvement

Involvement has been defined as, "a customer's overall subjective feeling of personal relevance" [6]. Personal relevance refers to, "the perceived linkage between an individual's needs, goals, and values (self-knowledge) and their product knowledge (attributes and benefits)" [7]. This study will focused on both Enduring Involvement (EI) and purchase involvement. Therefore, this study proposed a variable of "ego involvement" or (enduring involvement) following [7] line of thought, define it as "a customer's overall subjective feeling of personal relevance towards green".   Meanwhile, a construct of "purchase involvement" (or situational involvement) define it as "goal directed, and includes the individual's concern to the knowledge (familiarity and expertise) about the green services category that a customer gains over time".

2.3   Customer Satisfaction

In the hospitality and tourism industry, satisfaction is a crucial element in sustaining a competitive business. A

number of researchers in tourism and hospitality have examined customers' satisfaction in different contexts, including tourists, satisfaction with destination services [8, 9]. Numerous academics and practitioners alike have shown great interest in defining the concept of customer satisfaction in view of its capability in making or breaking a company's financial position, i.e., positive customer satisfaction has the potency to raise a company's revenue by stimulating customer's repurchase intention and generating positive word of mouth while a negative one will persuade customer to switch company.

3. Theoretical Framework

Based on the theoretical backgrounds explained earlier, this study derives a theoretical model that shows the theoretical relationship between Service Quality, Involvement, and Customer Satisfaction (see Figure 1).Therefore, the following hypothesis was anticipated:

H1: Service Quality has significantly relationship toward Involvement.
H2: Involvement has significantly relationship toward Customer Satisfaction.
H3: Service Quality has significantly relationship toward Customer Satisfaction
H4: Involvement mediated the relationship between Service Quality and Customer Satisfaction.
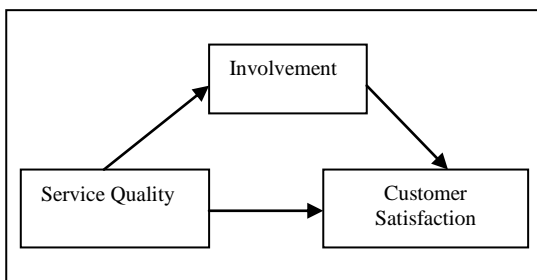

Figure 1. Framework Model

4. Methodology

4.1 Sample

The data used in this study consists of questionnaire responses from participants who visited the certified green hotels in Malaysia. 450 questionnaires were distributed and 317 responses were received, yielding a response rate of 70%. In order to collect the data, a cover letter has been attached to each set of the questionnaire informing the purpose of the study to the participants. The questionnaire was personally distributed to the person in charge of the Rooms Division Department. Three weeks were given to the Rooms Division Department to distribute the questionnaires in the hotel rooms. After three weeks, a telephone call has been used to remind the person in charge that the questionnaire will be collected.

4.2 Analytical Method

Structural Equation Modeling technique with Partial Least Square (i.e. PLS-SEM) estimation method was employed to explore the relationship among the targeted constructs [10] with the 5000 bootstrapping replication to get reliable results [11]. This technique allows the researchers to testing the convergent and discriminant validities of the measurement model that being proposed [12]. Two-stage approach estimation technique was also employed in this analysis procedure since the targeted constructs involved higher order constructs (i.e. HOC) by using the Latent Variable Score (i.e. LVS) estimation score [13]. In addition, Importance Performance Map Analysis (i.e IPMA) was also employed for assessing the importance key areas for increasing the Satisfaction level [12, 14, 15].

5. Findings

5.1 First Order Measurement Model

All indicators that used to measure the targeted constructs in this first order measurement model (i.e Table 1) meet the minimum requirement of the convergent validity such as loading values above .70, and also the AVE values also above .50 [12]. Besides that, both reliability tests (i.e. Composite Reliability and Cronbach's Alpha) for each targeted construct were also above .70 [12]. The HTMT ratio (i.e. Table 2) test were also less than 0.90, hence it confirms that, each latent variable was totally discriminant to each other [16]. Hence, the LVS can be used at the second-order measurement model since it passes the requirement of convergent and discriminant validities assessment.

Table 1: Convergent Validity for First-Order Measurement Model

LV	Indicator	Loading	AVE	Composite Reliability	Cronbach's Alpha
Reliability	Reli1	.756**	.558	.791	.801
	Reli2	.748**			
	Reli3	.736**			
Responsiveness	Resp1	.798**	.612	.825	.826
	Resp2	.773**			
	Resp3	.775**			
Assurance	Ass1	.763**	.596	.816	.819
	Ass2	.795**			
	Ass3	.758**			
Empathy	Empt1	.743**	.574	.802	.798
	Empt2	.761**			
	Empt3	.769**			
Tangible	Tang1	.724**	.537	.777	.785
	Tang2	.736**			
	Tang3	.739**			
Endurance	Endu1	.897**	.805	.925	.931
	Endu2	.881**			
	Endu3	.913**			
Purchasing	Purch1	.876**	.804	.954	.948
	Purch2	.889**			
	Purch3	.909**			
	Purch4	.917**			
	Purch5	.893**			
Satisfaction	Satis1	.956**	.932	.976	.973
	Satis2	.967**			
	Satis3	.973**			

Note: LV = Latent Variable; AVE = Average Variance Explained; **p <.01.

Table 2: HTMT Discriminant Analysis for First-Order Measurement Model

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1)								
(2)	.615							
(3)	.623	.604						
(4)	.601	.619	.678					
(5)	.701	.627	.685	.636				
(6)	.578	.501	.578	.549	.638			
(7)	.598	.498	.519	.521	.507	.493		
(8)	.413	.513	.397	.407	.431	.395	.417	

Note: (1) = Reliability; (2) = Responsiveness; (3) = Assurance; (4) = Empathy; (5) = Tangible; (6) = Endurance; (7) = Purchasing; (8) = Satisfaction.

5.1   Second Order Measurement Model

The convergent validity assessment (i.e. Table 3) confirm that each targeted constructs meet the minimum requirement of convergent validity (i.e. indicator loading > .70, AVE > .50, Composite Reliability and Cronbach's Alpha were > .70) [11,12]. In addition, the HTMT ratio tests for this model (i.e. Table 4) were also less than 0.90 for each pair of constructs. Therefore, it is indicated that, the targeted constructs in this model were totally discriminant to each order [12, 16]. Hence, the assessments of structural model and mediating effect can be evaluated for answering the specific proposed hypothesis.

Table 3: Convergent Validity for First-Order Measurement Model

LV	Indicator	Loading	AVE	Composite Reliability	Cronbach's Alpha
Service Quality	Reliability	.767**	.657	.905	.869
	Responsiveness	.827**			
	Assurance	.821**			
	Empathy	.828**			
	Tangible	.808**			
Involvement	Endurance	.858**	.784	.879	.728
	Purchasing	.912**			
Satisfaction	Satis1	.785**	.561	.793	.785
	Satis2	.706**			
	Satis3	.753**			

Note: LV = Latent Variable; AVE = Average Variance Explained; **p <.01.

Table 4: HTMT Discriminant Analysis for Second-Order Measurement Model

	(1)	(2)	(3)
(1)			
(2)	0.596		
(3)	0.513	0.675	

Note: (1) = Service Quality; (2) = Involvement; (3) = Satisfaction.

5.3   Stuctural Model and Mediating Testing

The structural analysis indicated that, Service Quality and Involvement can explained around 28.9% (i.e. R^2 = .289) of variance explained toward Satisfaction, whereas about 17.2% (i.e. R^2 = .172) of variance explained for Involvement was also explained by the Service Quality. In addition, the effect size (i.e. f^2) and predictive relevance (i.e. q^2) for each path can be considered as weak to large effect [12].

Table 5: Structural Model Assessment for Second-Order Measurement Model

	β	t-statistic	95% BCa Confidence Interval[a]	f^2	q^2
SQ → INV	0.414	5.882**	(0.263, 0.540)	.207	.231
INV → SAT	0.239	3.586**	(0.106, 0.363)	.167	.106
SQ → SAT	0.393	6.573**	(0.260, 0.497)	.180	.129

Note: SQ = Service Quality; INV = Involvement; SAT = Satisfaction; β = Standardized Beta Coefficient; BCa = Bias Corrected and Accelerated; f^2 = Effect Size; q^2 = Predictive Relevance; [a]The bootstrap samples was 5000 samples; **p <.01.

Besides that, the analysis indicated that, Service Quality (β = 0.393, t = 6.573, p <.01; 95% BCa CI: (0.260, 0.497)) and Involvement (β = 0.239, t = 3.586, p <.01; 95% BCa CI: (0.106, 0.363)) having a positive significant effect toward Satisfaction. Besides that, in the simultaneous concept, Service Quality was also giving a positive significant effect Involvement (β = 0.414, t = 5.882, p <.01; 95% BCa CI: (0.263, 0.540)). Hence, it is indicate that, if the average level of Service Quality was high, then the level of Involvement and Satisfaction was also high. Besides that, in the same way, when the average level of Involvement was high, then the average of Satisfaction tend to be high.
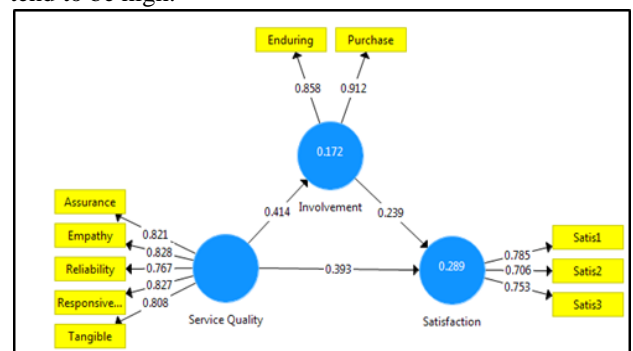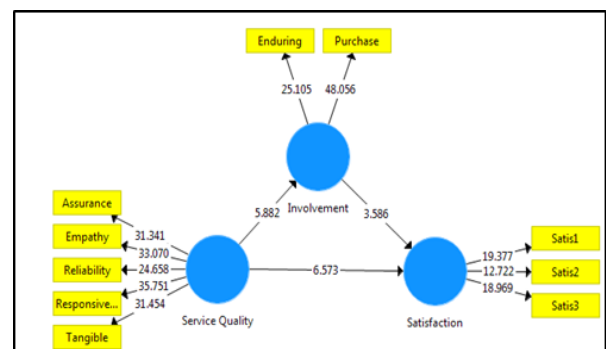

Figure 2: Loading Assessment

Figure 3: Bootstrapping Assessment

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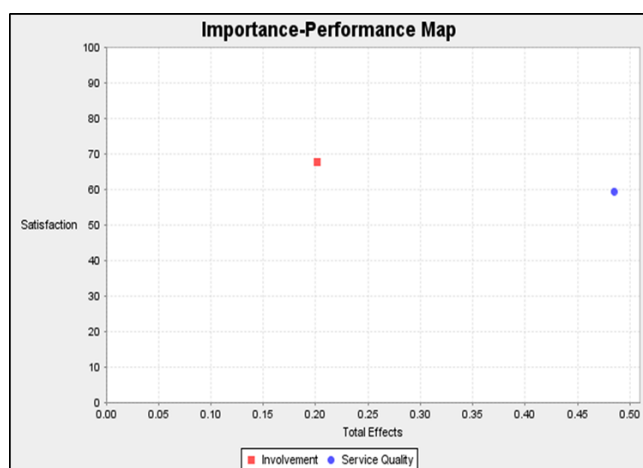

Figure 4: IPMA Analysis

Figure 4 indicated that, Service Quality construct is the very important construct to increase the Satisfaction level, since it having a highest total effect value as compare to Involvement construct (i.e. refer to X-axis reading). Besides that, Involvement construct can be considered having a highest performance values toward Satisfaction level as compare to Service Quality constructs (i.e. refers to Y-axis reading). Therefore, the analysis indicated that, Service Quality play the importance roles to increase the Satisfaction levels, whereas Involvement give an additional forces to increase the Satisfaction level due it having a good performance level.

6.   Discussions and Future Research

6.1   Discussions

The primary objectives of this study were to investigate and develop a theoretical relationship among service quality, involvement and satisfaction which in turn promoting the green hotel industry to become more competitive. The SmartPLS analysis supported the existence of statistically significant relationships between service quality, and involvement (H1), service quality and satisfaction (H2), involvement and satisfaction (H3), On the other hands, the findings conclude that involvement mediates the relationship between service quality and satisfaction (H4). This indicates that service quality and involvement are important variables influencing satisfaction in green hotel segments.

6.2   Future Directions

There are two major limitations worth noting in this study, which are relating to the sample size and the industry involved. Since this study is confined to green hotel guests in Klang Valley area, generalizability of the findings may be rather limited. Therefore future research may need to focus on green hotel guests in other states, in order to gain more comprehensive perspective and stronger representativeness of the study in the local context. Future research also may extends in other service industries such as retail or public transportation industry as no such research has been conducted in those industries in Malaysia.

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