



Service Quality, Mediation Effect of Customer Satisfaction, Customer Loyalty, and Moderating Role of Interpersonal Relationship: Case of Four-Star Hotels in Kuala Lumpur, Malaysia

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Authors' contributions

This work was carried out in collaboration between both authors. Notably, the current study is an extraction of the corresponding author's doctoral dissertation author SN. Authors SN and MMK contributed equally to perform the present article. Both authors read and approved the final manuscript.

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ABSTRACT

The importance and prominent role of service quality in service industries are inevitable. Previous scholars have investigated relationships among service quality, customer satisfaction, and customer loyalty with fundamental theories in this research era, as proposed in marketing and psychological behavior. Ergo, their consistencies have been supported by theoretical justification. This research paper aims to determine the effect of service quality on customer loyalty directly and through the mediating role of customer satisfaction and the moderating role of interpersonal relationships in the four-star hotels located in Kuala Lumpur, Malaysia. This research's developed model consists of four latent variables: service quality, customer satisfaction, interpersonal relationship, and customer loyalty. A quantitative approach through the distribution of 550 questionnaires with a response rate of 69.81 percent was taken. Collected data were processed via IBMSPSSAMOS software. Firstly, reliability and factor analysis in order to ensure normality of the collected data, adequacy of sample

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size were run. Secondly, utilizing structural equation modeling (SEM) via analysis of moment structure (AMOS) program. Confirmatory factor analysis (CFA) with a two-step strategy was run to hypotheses testing. Thirdly, hierarchical regression analyses were conducted for testing the moderating role of interpersonal relationships. Findings supported the notion that service quality has a positive and direct impact on customer satisfaction and loyalty. Customer satisfaction mediates the relationship between service quality and customer loyalty. Finally, interpersonal relationship moderates the relationship between service quality and customer satisfaction positively. Consequently, the interpersonal relationship moderates the relationship between customer satisfaction and customer loyalty positively. This research's originality and value are for academics, practitioners, and managers in service industries, especially hospitality industries and exclusively managers in the four-star hotels in Kuala Lumpur, Malaysia.

Keywords: Service quality; customer loyalty; hospitality industry; Kuala Lumpur; structural equation modeling.

1. INTRODUCTION

In a competitive era, all business entities are looking to gain a competitive advantage and dominate the market or even survive them. Among different kinds of business industries, service industries are known and recognized by offering high-quality services and attracting consumers' intention and loyalty. Therefore, it can be stated that customer service in the service industry is everything [1].

By reviewing the literature, it can be asserted that since the study by [2], many scholars have conducted studies on the relationship among service quality, customer satisfaction, and loyalty of which will be reviewed in the literature review part of this scientific article. Notably, the prediction of service quality on attracting behavioral intention, satisfaction, and loyalty to the service industries has also attracted researchers' attention. To sum up, this article's authors can deduce that service quality on satisfying consumers and their loyalty to the service industries is unavoidable.[1]. By reviewing the extant literature, it can be recapitulated that there are inconsistencies among the results of studies in this research era, such as [3,4]. However, scholars' investigations reveal that outcomes related to service quality, customer satisfaction, and customer loyalty are synchronized. Mentioned contradiction in the findings of previous studies and the importance of fidelity of customers in the hospitality industry have been motivated authors of this original research paper in order to determine the effect of service quality on customer loyalty through mediating the role of customer satisfaction and also moderating the role of the interpersonal relationship as a psychological variable.

To outline this study, firstly, expedient previous studies will be reviewed. Secondly, theoretical justification will be discussed in order to support consistencies among the latent variables of the research model. Thirdly, the research model will be illustrated, and research hypotheses will be formulated referring to the relevant literature, theoretical knowledge. Fourthly, collected data will be analyzed through IBMSPSSAMOS. Finally, conclusions, managerial implications, and recommendations for future studies will be clarified.

2. LITERATURE REVIEW

2.1 Comprehensive Review of Former Felicitous Studies

[4] aimed to investigate the antecedents and consequences of customer satisfaction. [4] developed a model to link the antecedents and consequences of satisfaction in a utility-oriented framework explicitly. They estimated and tested the model against alternative hypotheses from the satisfaction literature. In the process, a unique database was analyzed: a nationally representative survey of 22,300 customers of various significant products and services in Sweden in 1989–1990. Several well-known experimental findings of satisfaction research were tested in a field setting of national scope. For example, [4] found out that satisfaction is best specified as a function of perceived quality and “disconfirmation”—the extent to which perceived quality fails to match pre-purchase expectations. Surprisingly, expectations did not directly affect satisfaction, as was often suggested in the satisfaction literature. Besides, [4] found out quality, which falls short of expectations, had a more significant impact on satisfaction and repurchase intentions than the rate which exceeds expectations. Moreover, [4]

found out that disconfirmation was more likely to occur when quality was easy to evaluate. Finally, in terms of systematic variation across firms, [4] found out the elasticity of repurchase intentions concerning satisfaction to be lower for firms that provide high satisfaction. Ergo, insinuating a long-run reputation affects insulating firms that consistently provide high satisfaction[1, 4].

According to the [5]'s research, "Service quality and customer satisfaction are widely recognized as key influences in the formation of consumers' purchase intentions in service environments. However, a review of the existing literature suggests that the specific nature of the relationship between these important constructs in the determination of consumers' purchase intentions continues to elude marketing scholars [6]; [7]; [8]; [9]. The study was designed to help understand these relationships by empirically assessing the nature of the relationship between service quality and consumer satisfaction in the formation of consumers' purchase intentions across four unique service industries. The results of the current research, coupled with the weight of the evidence in the emerging services literature, suggested that consumer satisfaction is best described as moderating the service quality/purchase intention relationship"[1, 5].

[10] conducted a study in Taiwan to examine the direct effect of perceived product quality and perceived fairness price on customer loyalty. Furthermore, the scholars examined the effects of perceived product quality, perceived service quality, and perceived fairness price on customer loyalty through customer satisfaction. This study's research problem is customer loyalty in Taiwanese automobile companies, three major auto firms Mitsubishi, Nissan, and Toyota. It is worthwhile noting that these mentioned firms have dominated Taiwan's car market. [10] took a quantitative approach, and a survey was conducted on 495 customers in 15 repair centers of three major auto firms Mitsubishi, Nissan, and Toyota. Data analysis was processed through the powerful technique SEM via the LISREL program. The finding of the study indicated that perceived service quality mainly affects customer loyalty through customer satisfaction.

[11] conducted a study to show the relationship between tourism service quality and customer loyalty in the Jordanian Five-star hotels. They distributed their questionnaires among the tourists who stayed in three Marriot hotel located in three cities during the summer of 2008, for three months, in Jordan [11]. Three hundred

twenty-two questionnaires were completed in the presence of the scholars. To analyze the data, SPSS version 16.0 was used, and also various statistical techniques, including factor analysis, validity, reliability, and multiple regression analyses, were performed to test and analyze the data. The findings showed that the four dimensions of service quality involving tangibility, empathy, reliability, and responsiveness predict customer loyalty significantly but assurance with $\beta = .072$, $p > 0.05$; t -value = 1.431 didn't have significant relationship with the customer loyalty. Furthermore, the study's findings indicated that tangibility was the most remarkable factor in predicting the evaluation of tourism service quality, which was followed by empathy, reliability, and responsiveness, respectively [1,11].

[12] conducted a study in the Yunnan province of China to evaluate the quality of service in Yunnan's hotel industry and investigate the effects of service quality on customer satisfaction, customer loyalty, and hotel brand image. [12] took a mixed-method approach involving qualitative and quantitative methodologies. The study's research model by [12] consisted of service quality, customer satisfaction, customer loyalty, and brand image. [12] formulated hypotheses of their study related to the research model and relevant literature that support consistency amongst variables. Qualitative data collection was applied via face-to-face interviews with 10 to 15 customers at one target hotel. It is notable to mention that interview took 30 to 45 minutes per person. For the case of quantitative methodology, [12] distributed 800 questionnaires in total, and 412 complete copies were returned. The SEM technique, a powerful method for data processing, was utilized by [12]. The findings indicated that service quality positively affects customer satisfaction, customer loyalty, and a negative impact on brand image. Secondly, customer satisfaction has positive effects on customer loyalty and brand image. Thirdly, customer loyalty has a positive effect on brand image. The research conducted by [12] brought practical and helpful insights for hotel managers in the Yunnan province of China[1,12].

[3] conducted a study in Pakistan to investigate the factors affecting the brand loyalty of the customers of the Auto-mobile industry in the region of Pakistan using the European Customer Satisfaction Index (ECSI) model. The study's research problem by [3] is referred to customer loyalty in the automobile industry in Pakistan.

The authors of the study took a quantitative approach involving the distribution of 226 questionnaires among respondents. Data analysis was run through SEM via the AMOS program by running CFA. Firstly, the results indicated that customer expectations positively influence the perceived quality, perceived value, and customer satisfaction. Secondly, Perceived quality has an insignificant effect on customer satisfaction. Thirdly, Customer trust has a negative impact on customer loyalty. Fourthly, Customer education has a positive impact on customer loyalty and customer satisfaction. And finally, customer satisfaction has a direct and strong relationship with customer loyalty. More satisfied customers are more loyal to the firm[1,3].

In the study by [13], Pakistan's hotel industry was considered for conducting the purpose of the study, which was to investigate the influence of service quality on customer satisfaction and loyalty, and brand image. Two hundred fifty questionnaires were distributed among the customers of 8 hotels from 3 to 5 stars in different Pakistan cities. A quantitative method was taken to collect the data and measure and analyze these data SPSS 19, and the structural equation modeling (SEM) technique was applied. [13] employed the questionnaire with 52 questions, which was used by [12]. The findings indicated the positive and significant link between service quality and satisfaction of customers as well as service quality and customer loyalty. Besides, it was found a significant impact of customer satisfaction on customer loyalty. Also, customer satisfaction and brand image had a positive relationship as well as customer loyalty and brand image. Therefore, [13] stated that the Hotel's service quality could increase customer loyalty and, in turn, the adherence can enhance the perception of the brand image[1,13].

[14] tried to explore the dimensional structure of the SERVQUAL scale in the Nigerian automobile repair sector's services and establish the influence of service quality dimensions on customer satisfaction and loyalty as the twofold purpose of their research. A quantitative method and SPSS were employed to conduct the study. The outcomes suggested that in the automobile services sector, the dimensional structure of the SERVQUAL scale did not match the results of previous reports. In reality, the commitment was shown as a new different dimension of service quality. Besides, the outcomes revealed that service quality dimensions were significant predictors of customer satisfaction and loyalty.

The commitment as a new dimension had the most significant degree of this impact[1,14].

A study in the Thailand telecommunications industry was carried out by [15]. [15] The study aims to find the link between service quality's specific dimensions for residential internet services and customer loyalty in both behavioral and attitudinal loyalty. The SEM technique was applied, and AMOS version 20 was employed to analyze the data. The research results revealed that all service quality dimensions related to attitudinal and behavioral loyalty except customer service and technical support. In contrast, information and website support was the best predictor of customers' attitudinal and behavioral loyalty. [1,15].

2.2 Theoretical Justification

2.2.1 Stimulus-Organism-Response (SOR) theory

[16] Proposed (SOR) theory posits that stimuli from environments affect an individual's cognitive and affective reactions, leading to behavior [16]. "This paradigm has been widely applied to consumer behavior studies. The SOR paradigm has been used to investigate the shopping outcomes of online stores. The atmospheric cues work as the stimuli that influence shoppers' emotional and cognitive states and then lead to the response, approach/avoidance behavior" [17]. A similar model (also based on the SOR) was constructed recently to examine the effects of atmospheric web cues on users' emotional responses on their purchasing intentions in e-commerce. It is uncovered that vividness and interactivity significantly impact users' valence and arousal rates [18].

In the model "S" as the stimulus of environmental features to "R" as the response for approach or avoid behavioral intention (BI) via the "O" which is the organism as emotions of customers that is internally generated. The emotional organism is a mediator that discourages the approach or avoids behavioral intention [19,20]. The SOR model linked [16] the physical environment to the individual behavioral intention effect. Baker *et al.*[21] and Donovan and Rossiter [22] implemented this model in retail environments like service centers and customer repurchase behavior.

Such behavioral intention includes patronage and searches via word-of-mouth. Other researchers supported the assertion that clients

use tangible environments, such as employee service, to evaluate service quality [23,24]. The vital attributes result in the client's perceptions of high quality of service, enhancing customer satisfaction, and customer loyalty for patronage. Good quality of service is no longer an attraction even with low prices for business success [25], especially in the hotel industry where customers desire and use a tangible environment. Today's customers are now sophisticated and are familiar with hotel service such that it takes more than the standard service quality to satisfy them. Thus, there is no room for poor service in the service jobs rendered to customers. They imply that an overall excellent servicing experience via an incredibly good atmosphere and high-quality employee service is needed to achieve customer satisfaction. Hotel service quality and customer satisfaction are prerequisites for customer loyalty, repeat servicing, and word-of-mouth in a positive manner [26, 27]. The intense market competitiveness is presumed as a key to gain competitive advantage depending on high-quality service delivery that leads to customer satisfaction [26]. In a retail business, the atmosphere variables are the stimuli that drive clients' internal emotional state of the organism to influence behavioral intention response [28].

Avoidance behavior is to escape from the environment by ignoring other services [22]. Previous studies had applied [16]'s model based on the role of environmental stimuli as a predictor of emotional response, like arousal or pleasure and customer behaviors' predictor, such as more purchases on a cosmetic accessory or spare parts [29,30]. Although [16]'s model had significantly contributed to literature, it is still insufficient to use the environment as stimuli for customers' perception of quality, which is a subset of service stimuli.

Furthermore, other services also have vital roles, as well. For instance, in a service center for automobiles, genuine spare parts and the mechanic's installation skill are a set of stimuli coupled with a physical workshop environment that will predict emotional response for future behavior [31,32]. For that hedonic or pleasure nature of service quality in the hotel industry, there is an influence of inclusion, control, and affection to moderate satisfaction creation for future revisit intention. Hence, the service provider's employees are another component of service quality for the hotel industry.

2.2.2 Fundamental Interpersonal Relationship Orientation (FIRO) theory

The FIRO theory was propounded by Schutz [33]. It described and explained individual behavior and its interaction with people. The empirical application used FIRO-Behavior (FIRO-B) and has since been widely adopted by the social psychologist. The theory measures the interpersonal relationship of a customer by comparing the customer's needs with others.

These needs include inclusion, control, and affection. These three dimensions of conditions consist of two-directional behavior of expressed and wanted action. The framework uses desired behavior to describe customers' will to be included, controlled, and affected to maintain closeness with the service provider. Expressed behavior indicates the extent to which customers are willing to be included, controlled, and emotionally bonded with service providers. Thus, the FIRO-B represents the need to maintain and establish a satisfactory/salutary relationship with service providers to interact and associate with each other.

The environmental aspect constitutes high and low task-relevant cues [34]. The high task-relevant signals are customer service policies that enable customers to attain shopping goals. In contrast, the low task-relevant cues are music and Wi-Fi facilities for shopping accomplishment [34]. The signals resemble unified typology for service characteristics similar to the retail store atmosphere [35]. In the current study, service quality is seen as a tangible atmospheric characteristic of a service center. According to the (SOR) model in which the psychology of the environment is atmospheric, cues are categorized as the "stimulus," customer' reactions, which is an affection of "organism," and customer approach or avoidance behavior, which is the "response" [22].

Current studies on service quality dimensions adapted from Parasuraman *et al.* [36] classify tangibility, reliability, responsiveness, assurance, and empathy as customers "stimulus." In contrast, their satisfaction reactions, known as "organism," towards either approach or avoidance behavior, are classified as attitude resulting in a "response" such that behavioral and attitudinal consequences result in repurchase, word of mouth, and commitment. Also, customers' behavior like inclusion or involvement of FIRO would moderate service quality and satisfying relationships. This point is also supported by

Eroglu et al. [34] on customer involvement moderated between atmosphere and reaction of affection in the customer context. They identified that the shopper's quality induces high involvement that moderate customer state of affective satisfaction for approach behavior. The contrary would be insignificant [17]. The proposition is that the participation or inclusion at higher levels will positively affect service quality and satisfying relationship.

One conspicuous point to be emphasized is understanding/recognizing customers regarding service center profitability and interpersonal relationships that encourage face-to-face interactions with long-term relationships, which can play a pivotal and consequential role. One major challenge faced by enterprises is determining the impacts of service quality on customer satisfaction and loyalty. As a result, there is a need for a moderating effect of customer characteristics on purchase behavior. To be successful in any business, service centers should not neglect customer satisfaction [37-39]. In reality, according to past research findings, the fundamental importance of business is to create a satisfied customer [40]. In support of the above arguments, [41] suggests that marketing concept themes should be centered on satisfying customers' needs through service delivery, such that satisfied customers would show good behavior towards service centers like future patronage and recommendation to others.

Referring to Schutz's FIRO, the current setbacks of FIRO theory is since FIRO-B, where B is the behavior test of reliability, imitate one's motive. Yet, the question of how one's behavior data aids his/her life-long needs remains unanswered. These explications are mostly because Schutz's theory "was over personal" and thus needed to be moderated. Schutz's FIRO theory was also based on the "Truth Option," which changed the threat of his basic thesis. He omitted the need for "affection" and substituted it with the openness dimension. This terminology change symbolized a shift of thought with the inclusion of determinants of inclusion, control, and openness to others, on which Schutz's theory was adapted.

Given that life and behavior, thought, and feelings are unique to different individuals, the choices should affect each individual differently based on their respective self-concepts and emotions. However, Schutz's theory placed a premium on interpersonal consciousness, contrary to the original philosophy of motivational theory, and endorsed openness, morality,

honesty, and right. Thus, a control, which is self-determinant, should lead to a sense of competency and a vulnerability that is willing to deal with others, as a service provider should affect their sense of love.

2.3 Research Model

By reviewing previous studies by scholars and stating theoretical justification, the current original research model is illustrated. The present study model consists of four latent variables: service quality, customer satisfaction, customer loyalty, and interpersonal relationship. Service quality is an exogenous variable; customer satisfaction is the mediating variable and exogenous one for customer loyalty. Customer loyalty is an endogenous variable, and interpersonal relationship is a moderating variable. The pattern introduced by [42] for statistical mediation analysis of customer satisfaction is utilized. Besides, service quality is a function of five dimensions, as proposed by [2]: reliability, responsiveness, assurance, empathy, and tangibility. Fig. 1 depicts the model of the current study.

2.4 Research Hypotheses

The formulation of hypotheses in this research is in line with the literature review, theoretical justification, as stated earlier, and concerning the research model, as illustrated in Fig. 1. Thus, the following hypotheses are developed.

H1: Service quality impacts customer satisfaction in the four-star hotels in Kuala Lumpur, Malaysia, positively and directly.

H2: Service quality impacts customer loyalty in the four-star hotels in Kuala Lumpur, Malaysia, positively and directly.

H3: Customer satisfaction impacts customer loyalty in the four-star hotels in Kuala Lumpur, Malaysia, positively and directly.

H4: Customer satisfaction mediates the relationship between service quality and customer loyalty in the four-star hotels in Kuala Lumpur, Malaysia, positively and indirectly.

H5: Interpersonal relationship moderates the relationship between service quality and customer satisfaction positively in the four-star hotels in Kuala Lumpur, Malaysia.

H6: Interpersonal relationship moderates the relationship between customer satisfaction and customer loyalty positively in the four-star hotels in Kuala Lumpur, Malaysia.

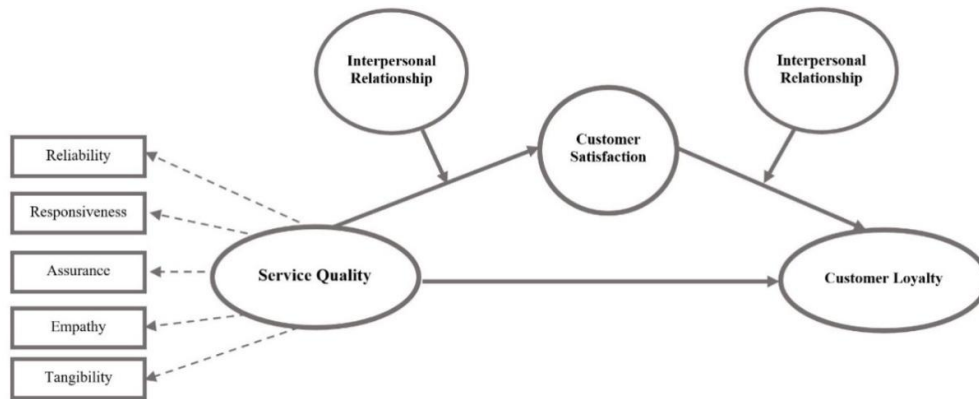


Fig. 1. Research model

3. METHODS

3.1 Questionnaire Development

The development of the questionnaire is based on exogenous and endogenous variables. As illustrated in this research paper's research model, the model consists of four variables: service quality, customer satisfaction, customer loyalty, and interpersonal relationship. For measuring service quality, the SERVQUAL model proposed by [2] indicates service quality by the five dimensions: tangibility, empathy, reliability, responsiveness, and assurance. For measuring service quality, 22 items of the SERVQUAL model were adapted. For measuring customer satisfaction, a scale introduced by YI [43], which involves six questions, was adapted, and for measuring customer loyalty scale introduced by Zeithaml, Berry [44], which involves seven questions, was utilized. Finally, for measuring interpersonal relationships, the scale proposed by [45] includes six items. All survey instrument items were rated based on a five-point frequency Likert scale from strongly disagree to agree strongly.

3.2 Data Collection Procedure

The target population of the study is the guests of four-star hotels in Kuala Lumpur for three reasons. Firstly, in Kuala Lumpur, there are many four-star hotels. Selecting these hotel classes enables the researcher to gather sufficient completed questionnaires to analyze the collected data. Secondly, the upper-class guests tend to give more weight to service benefits

[46,47]. Lastly, due to the limited resources at the researcher's disposal, the study's target population is restricted to the customer or guests of four-star hotels in Kuala Lumpur. Data collection in the present research was a kind of cross-sectional data survey. Because data gathering was done in a period from March to May 2016, 550 copies of survey questionnaires were distributed among guests of different 4-star hotels in Kuala Lumpur, Malaysia. Three hundred eighty-four copies were returned. Thus, the response rate was 69.81 percent. Questionnaire distribution was done with a field worker who had sufficient knowledge about survey content and no bias and managed this step by the principal author of this study.

4. DATA ANALYSIS AND RESULTS

4.1 Reliability Test

Reliability tests were run for each exogenous and endogenous variable of the research model separately, as illustrated in Fig. 1. According to [48], a value above .60 is acceptable for exploratory studies. Referring to the [49,50], in the SEM technique, the internal consistency coefficient should be above .70. As shown in Table 1, all the values are well and acceptable for conducting this research. Table 1 contains relevant information.

4.2 Factor Analysis

Factor analysis was run in SPSS version 22 software with principal axis factoring (PAF)

extraction method for all items of the survey questionnaire, which are 41 items for service quality, customer satisfaction, customer loyalty, and interpersonal relationship. Based on [51] and [52, 53], the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO-MSA) should be far greater than 0.6. As shown in KMO and Bartlett's Test table, the obtained result (KMO-MSA) is equal to .941. Ergo, it can be stated that the sample size is adequate. Besides, it is evident that Bartlett's Test of Sphericity is 16987.809, which is significant, and the P-value is equal to .000 and less than 0.05. Table 2 represents the related information.

4.3 SEM Technique

In the present study, SEM, a powerful data analysis technique through running CFA in AMOS Version 22 program, will be utilized. CFA will be run for the study's developed model and test the formulated hypotheses[54]. Notably, CFA is theory-driven [55]. CFA in AMOS will be run in the present study using a two-step strategy introduced by [56]. CFA with two step-strategy and maximum likelihood (ML) estimation method was run. Fig. 2 illustrates the first run of CFA in the AMOS program.

Based on the AMOS program's modification indices table after the first run, covariance arrows

were drawn between e10 and e11, e16, and e18. Fig. 3 illustrates the second run of CFA for the research model.

The conclusion is that after the second run, the overall model fit appears well. The χ^2 test yields a value of 164.783, which, evaluated with 130 degrees of freedom, has a corresponding p-value of .021. Additionally, the RMSEA is .026. It suggests that the model is an excellent fit for the data. The complete model fit summary and the parameter summary of AMOS tables have been appended in the appendix part of the article. Table 3 represents summarized significant fit measures.

4.3.1 Status of hypotheses

CFA results support the notion that service quality positively and directly predicts customer satisfaction and customer loyalty, with the standardized regression weights equal to .567 and .444, respectively. As a result, it can be concluded that H1 and H2 are supported. Moreover, results reveal that customer satisfaction directly affects customer loyalty with the standardized regression weights equal to .466. The conclusion is that H3 is also supported. Table 4 contains relevant information.

Table 1. Reliability test

Dimension or Latent Variable	Cronbach's alpha value	No. of Items
Customer Satisfaction (CS)	.850	6
Customer Loyalty (CL)	.912	7
Reliability	.862	5
Responsiveness	.711	4
Assurance	.752	4
Empathy	.688	4
Tangibility	.821	5
Service Quality (SQ)	.926	22
Interpersonal Relationship (IR)	.863	6

Table 2. KMO and Bartlett's test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.941
Bartlett's Test of Sphericity	Approx. Chi-Square	16987.809
	df	820
	Sig.	.000

Table 3. Fit measures after the second run

χ^2	df	χ^2/df	RMSEA	CFI	GFI	TLI
164.783	130	1.268	.026	.991	.953	.990
P-value=.021						

Table 4. Standardized regression weights for the default model

			Estimate
Satisfaction	<---	Service Quality	.567
Loyalty	<---	Satisfaction	.466
Loyalty	<---	Service Quality	.444

4.3.2 Mediating role of customer satisfaction

Table 5 contains the results of standardized indirect effects for the second run of the AMOS program's research model. As it is clear, there is an indirect relationship between service quality and customer loyalty with the positive regression

weights of .264. This point indicates that customer satisfaction mediates the relationship between service quality and customer loyalty .264 standardized regression weights are positive and significant. Thus, H4 is also supported.

Table 5. Standardized indirect effects for the default model

	Service quality	Satisfaction	Loyalty
Satisfaction	.000	.000	.000
Loyalty	.264	.000	.000

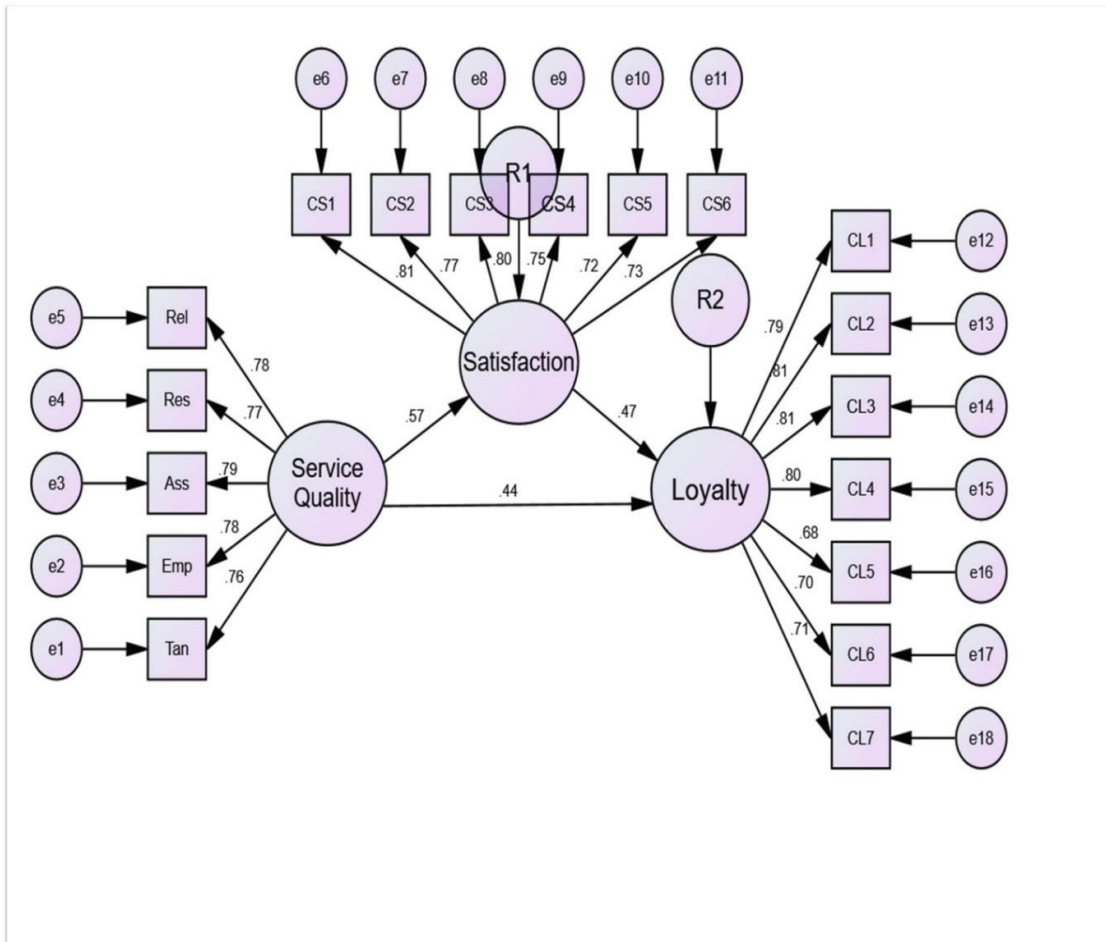


Fig. 2. Path diagram of CFA for the first run

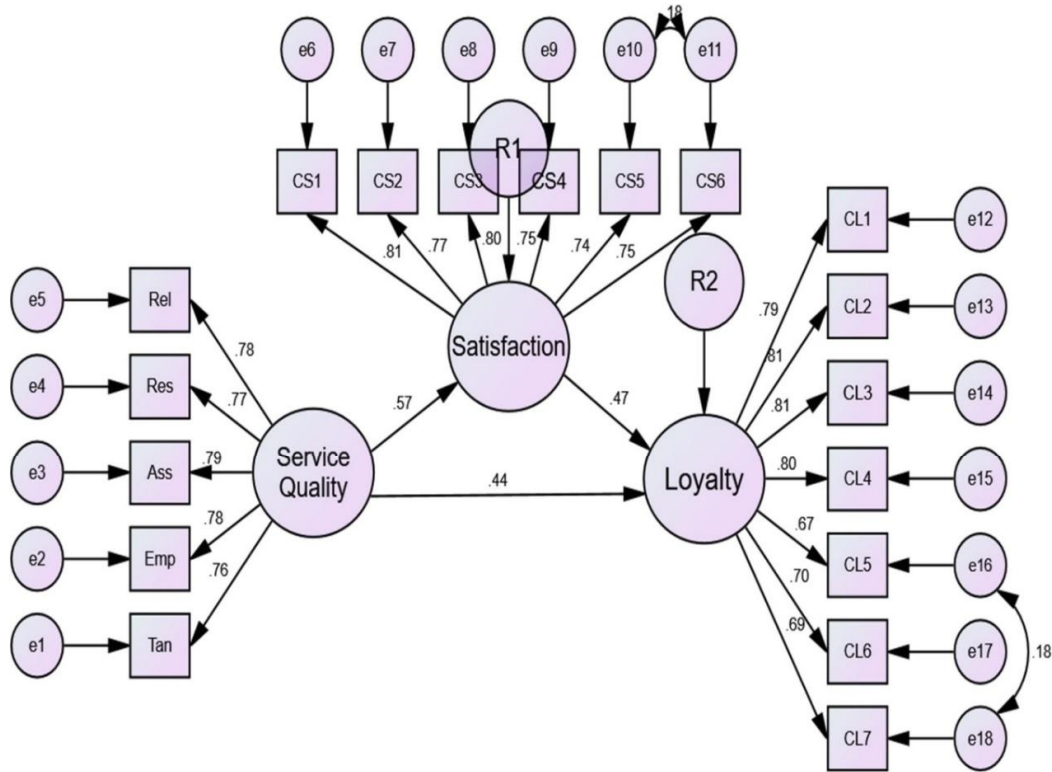


Fig. 3. Path diagram of CFA for the second run

4.3.3 Moderating role of interpersonal relationship

A moderating variable affects the direction or strength of the relationship between an exogenous and endogenous variable[57]. For testing hypotheses related to the moderation effect, those associated with the moderator's role, which is interpersonal relationship referring to the research model, hierarchical moderated regression analysis is suitable to determine the moderating variable's impact. The testing moderator method by conducting hierarchical regression analysis has been recommended by [51,58]. According to the [58], the moderating effect exists if the variance explained in the criterion is higher for the interaction effect model. Conducting hierarchical regression analysis for testing moderators, regression analysis without

entering the moderator is run in SPSS. Secondly, at the first dependent variable(endogenous one), then the moderator, and finally independent variable(exogenous one) will be entered with the entering method selection.

4.3.3.1 Moderating role of interpersonal relationship for service quality and customer satisfaction

As shown in tables 6 and 7, determination from .503 has been increased to .658 in model 2, the relationship between service quality and customer satisfaction after entering the interpersonal relationship as a moderator strengthens the connection positively, which indicates the relationship between service quality and customer satisfaction is moderated by interpersonal ties entirely. Thus, H5 is supported.

Table 6. Regression between SQ and CS before Entering IR

Model	R	R Square	Model Summary ^b		
			Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.503 ^a	.253	.251	.60565	1.983

a. Predictors: (Constant), SQ
b. Dependent Variable: CS

Table 7. Regression between SQ and CS after Entering IR

Model	R	R Square	Model Summary ^c		
			Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.589 ^a	.347	.346	.56617	
2	.658 ^b	.433	.430	.52850	1.951

a. Predictors: (Constant), IR
b. Predictors: (Constant), IR, SQ
c. Dependent Variable: CS

4.3.3.2 Moderating role of interpersonal relationship for customer satisfaction and customer loyalty

As delineated in tables 8 and 9, determination from .645 has been increased to .703 in model 2; the relationship between customer satisfaction and customer loyalty after entering the interpersonal relationship as a moderator strengthens the connection positively, which indicates the relationship between customer satisfaction and customer loyalty is moderated by interpersonal relationship entirely. Thus, H6 is supported.

5. DISCUSSION

Based on achieved results, it can be asserted that customer satisfaction has a positive direct

effect on customer loyalty. The conclusion is that the present study's findings are consistent with previous studies as reviewed in the literature review of the current research and contradiction with research by [3,4]. Moreover, the results of the present study and previous studies are based on theoretical justification.

As stated earlier, customer satisfaction in the present study model is a mediator for the relationship between service quality and customer loyalty. For testing the mediation effect of customer satisfaction, the authors of this research utilized a pattern proposed by [42] for statistical mediation analysis. The findings supported that customer satisfaction mediates the relationship between service quality and customer loyalty positively.

Table 8. Regression between CS and CL before Entering IR

Model	R	R Square	Model Summary ^b		
			Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.645 ^a	.416	.414	.53057	1.799

a. Predictors: (Constant), CS
b. Dependent Variable: CL

Table 9. Regression between CS and CL after Entering IR

Model	R	R Square	Model Summary ^c		
			Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.607 ^a	.368	.366	.55194	
2	.703 ^b	.494	.492	.49423	1.904

a. Predictors: (Constant), IR
b. Predictors: (Constant), IR, CS
c. Dependent Variable: CL

Finally, interpersonal relationship moderates the relationship between service quality and customer satisfaction and moderates the relationship between customer satisfaction and customer loyalty positively in the four-star hotels located in Kuala Lumpur, Malaysia.

6. CONCLUSION

This research implies significant messages to managers in the hospitality industry, especially four-star hotels in Kuala Lumpur, Malaysia. Offering services should be conformed to the customers' expectations. Service quality is a function of five dimensions: reliability, responsiveness, assurance, empathy, and tangibility. As shown in the current study results, all five dimensions had a significant positive relationship with service quality. Among them, assurance had the highest affinity. Providing and accommodating services inclusive of (offering promised services, fast and high-quality service, skilled workers/ employees, paying attention to the customers' needs, giving them individualized attention, creating special attention, and never forgetting the first-hand impression to return them in the future) will be striking and conspicuous points to take into consideration for managers who are implicated in service industries. Notably, managers should implement a basic strategy and consider that offering a high level of service quality is a successful way of gaining customers' loyalty.

Moreover, as revealed in the study results, the interpersonal relationship can strengthen service quality, customer satisfaction, customer satisfaction, and customer loyalty. Thus, employees offering appropriate services, developing long-term relationships, and their willingness to provide better facilities even when customers do not stipulate it can play salient roles to increase customer loyalty.

Regarding the above remarkable points, there will be beneficial and pragmatic contributions for both customers and managers in service industries, especially the hospitality industry and exclusively four-star hotels in Kuala Lumpur, Malaysia. The authors of current research's fundamental reason behind the mentioned assertion will lead to customer loyalty and increasing return on investment (ROI), revenue, profitability for four-star hotels, or the general hospitality industry.

6.1 Explication of Mediation Effect of Customer Satisfaction

The previous studies' work confirmed a theoretical model in which customer satisfaction mediates service quality and customer loyalty. As earlier mentioned, service quality is positively related to customer loyalty [59-67]. Also, service quality positively related to customer satisfaction [59, 68-75], and customer satisfaction significantly related to customer loyalty [13,76-83].

6.2 Elucidation of Moderating Effect of Interpersonal Relationship

In this study, an interpersonal relationship was a moderator that moderates the relationship between service quality and customer satisfaction and customer loyalty. FIRO-B instrument was used for interpersonal relationships. Schutz proposed an interpersonal relationship theory in 1958 named FIRO-B (fundamental interpersonal relations orientation). FIRO-B instrument has three dimensions, namely: Inclusion, Control, and Affection. The basic assumption of the FIRO-B model is that individuals try to establish a harmonious relationship with others in social interactions. According to Schütz [33], the FIRO-B instrument's inclusion dimension represents an individual's need for interaction with others. Control refers to the need for power and influence. Affection is the third dimension of the FIRO-B instrument, which defines the need for intimacy and friendship. Individuals need to express their affection behavior towards others and also need to maintain distance. Based on the reviewed literature, service quality is broadly spread or commonly known in the world. However, there are still debates among academics; why service quality does not always lead to customer satisfaction and loyalty. No research was found about the moderating effect of interpersonal relationships on the link between service quality and customer satisfaction and customer loyalty in the hotel industry. Therefore, this study contributes to the body of knowledge by examining the moderating effect of interpersonal relationships on the relationship between service quality and customer satisfaction and customer loyalty.

7. RECOMMENDATIONS FOR FUTURE STUDIES DEVELOPMENT

At this stage, it will be beneficial to highlight avenues for future studies in this research era. Extensions of research could be conducted to cover Malaysia's whole in luxury hotels, including four and five-star hotels. The current study was exclusively restricted to the cluster of four-star hotels in Kuala Lumpur, Malaysia. Admittedly, this study's extensions are highly suggested to cluster luxury hotels with the combination of qualitative and quantitative in future research development in Malaysia, hospitality industries in other countries, or even different kinds of service industries. Finally, as mentioned earlier, data processing in the current research was based on SEM, which is a powerful technique for data analysis [55]. SEM was done through the AMOS program. Future studies are highly recommended to process data through other statistical software such as EQS, LISREL, STATA, or R, used for advanced SEM.

CONSENT

As per international standard or university standard, participant's written consent has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Nikou S et al., Service quality, customer satisfaction, and customer loyalty: a comprehensive literature review (1993-2016); 2016.
2. Parasuraman A, Zeithaml VA, Berry LL, Servqual. Journal of retailing. 1988; 64(1):12-40.
3. Haq A. Satisfaction towards customer loyalty in auto-mobile industry of Pakistan. International Journal of Management and Business Research. 2012;2(4):363-371.
4. Anderson EW, Sullivan MW. The antecedents and consequences of customer satisfaction for firms. Marketing science. 1993;12(2):125-143.
5. Taylor SA, Baker TL. An assessment of the relationship between service quality and customer satisfaction in the formation of consumers' purchase intentions. Journal of retailing. 1994; 70(2):163-178.
6. Bitner MJ et al. Service quality: New directions in theory and practice. Encounter satisfaction versus overall satisfaction versus quality. 1994;77.
7. Bolton RN, Drew JH. Linking customer satisfaction to service operations and outcomes. Service quality: New directions in theory and practice. 1994; 173-200.
8. Dabholkar PA. Consumer evaluations of new technology-based self-service options: an investigation of alternative models of service quality. International Journal of research in Marketing. 1996; 13(1):29-51.
9. Oliver RL, Rust RT, Varki S. Customer delight: foundations, findings, and managerial insight. Journal of retailing. 1997;73(3):311-336.
10. Bei L-T, Chiao Y-C. An integrated model for the effects of perceived product, perceived service quality, and perceived price fairness on consumer satisfaction and loyalty. Journal of consumer satisfaction, dissatisfaction and complaining behavior. 2001;14:125.
11. Al-Rousan MR, Mohamed B. Customer loyalty and the impacts of service quality: The case of five star hotels in Jordan. International Journal of Human and Social Sciences. 2010;5(13):886-892.
12. Li X, Jarinto K. Service is power: exploring service quality in Hotel's business, Yunnan, China. International Business Research. 2012;5(5).
13. Saleem H, Raja NS. The impact of service quality on customer satisfaction, customer loyalty and brand image: Evidence from hotel industry of Pakistan. Middle-East Journal of Scientific Research. 2014;19(5):706-711.
14. Izogo EE, Ogba I-E. Service quality, customer satisfaction and loyalty in automobile repair services sector. International Journal of Quality & Reliability Management. 2015;32(3): 250-269.
15. Quach TN, Thaichon P, Jebarajakirthy C. Internet service providers' service quality and its effect on customer loyalty of different usage patterns. Journal of Retailing and Consumer Services. 2016; 29:104-113.
16. Mehrabian A, Russell JA. An approach to environmental psychology. the MIT Press; 1974.
17. Eroglu SA, Machleit KA, Davis LM. Empirical testing of a model of online store atmospherics and shopper responses.

- Psychology & Marketing. 2003;20(2):139-150.
18. Sheng H, Joqinapelly T. Effects of web atmospheric cues on users' emotional responses in e-commerce. *AIS Transactions on Human-Computer Interaction*. 2012;4(1):1-24.
 19. Chow HW et al., The effects of service quality, relational benefits, perceived value & customer satisfaction towards customer royalty in hair salon industry. *UTAR*; 2012.
 20. Kumar R, Barani G. Appraisal relationship between service quality and customer satisfaction in organized retailing at Bangalore City, India. *Industrial Engineering Letters*. 2012; 2(2):61-70.
 21. Baker J, Levy M, Grewal D. An experimental approach to making retail store environmental decisions. *Journal of retailing*; 1992.
 22. Donovan RJ, Rossiter JR. Store atmosphere: an environmental psychology approach. *Journal of retailing*. 1982;58(1):34-57.
 23. Chow H-s, et al., Service quality in restaurant operations in China: Decision-and experiential-oriented perspectives. *International Journal of Hospitality Management*. 2007;26(3):698-710.
 24. Ryu K, Han H. New or repeat customers: How does physical environment influence their restaurant experience? *International Journal of Hospitality Management*. 2011;30(3):599-611.
 25. Luk ST, Sharma P, Chen IS. Shopping motivation as a moderator in the retail service evaluation. *Journal of services marketing*. 2013;27(1):40-48.
 26. Han H, Ryu K. The roles of the physical environment, price perception, and customer satisfaction in determining customer loyalty in the restaurant industry. *Journal of Hospitality & Tourism Research*. 2009;33(4):487-510.
 27. Liu Y, Jang SS. The effects of dining atmospherics: An extended Mehrabian–Russell model. *International Journal of Hospitality Management*. 2009;28(4): 494-503.
 28. Kim H, Lennon SJ. E-atmosphere, emotional, cognitive, and behavioral responses. *Journal of Fashion Marketing and Management*. 2010;14(3):412-428.
 29. Donovan RJ, et al., Store atmosphere and purchasing behavior. *Journal of retailing*.1994;70(3):283-294.
 30. Wakefield KL, Blodgett JG. The effect of the servicescape on customers' behavioral intentions in leisure service settings. *Journal of services marketing*. 1996;10(6):45-61.
 31. Tseng YM. The impacts of relationship marketing tactics on relationship quality in service industry. *The Business Review*. 2007;7(2):310-314.
 32. Halinen A. *Relationship Marketing in Professional Services: A Study of Agency-Client Dynamics in the Advertising Sector*. Taylor & Francis; 2012.
 33. Schütz E. *Physiologie des Herzens*. Springer; 1958.
 34. Eroglu SA, Machleit KA, Davis LM. Atmospheric qualities of online retailing: A conceptual model and implications. *Journal of Business Research*. 2001; 54(2):177-184.
 35. Bitner MJ, Hubbert AR. Encounter satisfaction versus overall satisfaction versus quality. *Service quality: New directions in theory and practice*. 1994; 72-94.
 36. Parasuraman A, Zeithaml VA, Malhotra A. ES-QUAL a multiple-item scale for assessing electronic service quality. *Journal of Service Research*. 2005;7(3): 213-233.
 37. Arnold B, De Lange P. Enron: an examination of agency problems. *Critical Perspectives on Accounting*. 2004;15(6): 751-765.
 38. Reichheld FF, Sasser Jr WE. Zero defections: quality comes to services. *Harvard business review*. 1989;68(5): 105-111.
 39. Rust RT, Oliver RL. *Service quality: New directions in theory and practice*. Sage Publications; 1993.
 40. Drucker PF. *Management: Tasks, responsibilities, practices*. Harper & Row; 1974.
 41. Kohli AK, Jaworski BJ. Market orientation: The construct, research propositions, and managerial implications. *The Journal of Marketing*. 1990;1-18.
 42. MacKinnon DP. *Introduction to statistical mediation analysis*. Routledge; 2008.
 43. Yi Y. A critical review of consumer satisfaction. *Review of marketing*. 1990; 4(1):68-123.
 44. Zeithaml VA, Berry LL, Parasuraman A. The behavioral consequences of service quality. *The Journal of Marketing*. 1996; 31-46.

45. Hammer AL, Schnell ER. FIRO-B: technical guide. Consulting Psychologists Press; 2000.
46. Suhartanto D. An examination of brand loyalty in the Indonesian hotel industry. Lincoln University Digital Thesis; 2011.
47. Back K-J, Parks SC. A brand loyalty model involving cognitive, affective, and conative brand loyalty and customer satisfaction. *Journal of Hospitality & Tourism Research*. 2003;27(4):419-435.
48. Cronbach LJ. Coefficient alpha and the internal structure of tests. *Psychometrika*. 1951;16(3):297-334.
49. Hair JF, et al., *Multivar data analysis with readings*. Macmillan Pub. Indianapolis, IN; 1984.
50. Barclay D, Higgins C, Thompson R. The partial least squares (PLS) approach to causal modeling: Personal computer adoption and use as an illustration. *Technology studies*. 1995;2(2):285-309.
51. Coakes SJ, Steed L. SPSS: Analysis without anguish using SPSS version 14.0 for Windows. John Wiley & Sons, Inc; 2009.
52. Kaiser HF. An index of factorial simplicity. *Psychometrika*. 1974;39(1):31-36.
53. Bartlett MS. A note on the multiplying factors for various χ^2 approximations. *Journal of the Royal Statistical Society. Series B (Methodological)*. 1954;296-298.
54. Albright JJ. Confirmatory factor analysis using AMOS, LISREL, and MPLUS. The Trustees of Indiana University. USA; 2006. Available:<http://www.iub.edu/~statmath/stat/all/cfa/cfa2008.pdf>
55. Blunch N. Introduction to structural equation modeling using IBM SPSS statistics and AMOS. Sage; 2012.
56. Anderson JC, Gerbing DW. Structural equation modeling in practice: A review and recommended two-step approach. *Psychological bulletin*. 1988;103(3):411.
57. Baron RM, Kenny DA. The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of personality and social psychology*. 1986;51(6):1173.
58. Jaccard J, Turrisi R. Interaction effects in multiple regression. Sage; 2003.
59. Sivadas E, Baker-Prewitt JL. An examination of the relationship between service quality, customer satisfaction, and store loyalty. *International Journal of Retail & Distribution Management*. 2000; 28(2):73-82.
60. Kranias A, Bourlessa M. Investigating the relationship between service quality and loyalty in Greek banking sector. *Procedia Economics and Finance*. 2013;5:453-458.
61. Siddiqi KO. Interrelations between service quality attributes, customer satisfaction and customer loyalty in the retail banking sector in Bangladesh. *International Journal of Business and Management*. 2011;6(3):12.
62. Rahmani-Nejad L, Firoozbakht Z, Taghipoor A. Service quality, relationship quality and customer loyalty (Case study: Banking industry in Iran). *Open Journal of Social Sciences*. 2014;2(04):262.
63. Meharajan T. Concepts of service quality measurement in hotel industry; 2014.
64. Bojei J, alwie A. The influence of relationship quality on loyalty in service sector. *Journal of Economics and Management*. 2010;4(1):81.
65. Es R. The relationship between service quality and customer loyalty, and its influence on business model design-A study in the dutch automotive industry; 2012.
66. Lenka U, Suar D, Mohapatra PK. Service quality, customer satisfaction, and customer loyalty in Indian commercial banks. *Journal of Entrepreneurship*. 2009;18(1):47-64.
67. Du Y, Tang Y. A literature review on the relationship between service quality and customer loyalty. *Business and Management Research*. 2014;3(3):27.
68. Sureshchandar G, Rajendran C, Anantharaman R. The relationship between service quality and customer satisfaction—A factor specific approach. *Journal of services marketing*. 2002; 16(4):363-379.
69. Caruana A. Service loyalty: The effects of service quality and the mediating role of customer satisfaction. *European Journal of marketing*. 2002;36(7/8):811-828.
70. Ojo O. The relationship between service quality and customer satisfaction in the telecommunication industry: Evidence from Nigeria. *BRAND. Broad Research in Accounting, Negotiation, and Distribution*. 2010;1(1):88-100.
71. Jahanshani AA., et al. Study the effects of customer service and product quality on customer satisfaction and loyalty; 2014.

72. Orel FD, Kara A. Supermarket self-checkout service quality, customer satisfaction, and loyalty: Empirical evidence from an emerging market. *Journal of Retailing and Consumer Services*. 2014;21(2):118-129.
73. Santouridis I, Trivellas P. Investigating the impact of service quality and customer satisfaction on customer loyalty in mobile telephony in Greece. *The TQM Journal*. 2010;22(3):330-343.
74. Krishnamurthy R, SivaKumar MAK, Sellamuthu P. Influence of service quality on customer satisfaction: Application of SERVQUAL model. *International Journal of Business and Management*. 2010; 5(4):117.
75. Munusamy J, Chelliah S, Mun HW. Service quality delivery and its impact on customer satisfaction in the banking sector in Malaysia. *International Journal of Innovation, Management and Technology*. 2010;1(4):398.
76. Kandampully J, Suhartanto D. Customer loyalty in the hotel industry: The role of customer satisfaction and image. *International Journal of Contemporary Hospitality Management*. 2000;12(6): 346-351.
77. Kandampully J, Suhartanto D. The role of customer satisfaction and image in gaining customer loyalty in the hotel industry. *Journal of Hospitality & Leisure Marketing*. 2003;10(1-2):3-25.
78. Kandampully J, Hu H-H. Do hoteliers need to manage image to retain loyal customers? *International Journal of Contemporary Hospitality Management*. 2007;19(6):435-443.
79. Padhi SR. A cross-sectional, multivariate, disaggregated study on impact of key drivers of customer satisfaction on brand perception and loyalty in selected hotel chains of India. *International Journal of Technology Marketing*. 2013;8(4):431-452.
80. Ganiyu RA, Uche II, Adeoti OE. Is customer satisfaction an indicator of customer loyalty? *Australian Journal of Business and Management Research*. 2012;2(7):14.
81. Tweneboah-Koduah EY, Farley AYD. Relationship between customer satisfaction and customer loyalty in the retail banking sector of Ghana. *International Journal of Business and Management*. 2016;11(1):249.
82. Moslehpour M, Huang W-L. The Role of Customer Satisfaction Variables in Gaining Customer Loyalty: A Case Study of Isis Hotel & SPA in Turkey; 2012.
83. Duman T, KOZAK M. The Turkish tourism product: Differentiation and competitiveness. *Anatolia*; 2010;21(1): 89-106.

APPENDIX

Model Fit Summary and Parameter Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	41	164.783	130	.021	1.268
Saturated model	171	.000	0		
Independence model	18	4139.513	153	.000	27.056

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.024	.953	.938	.724
Saturated model	.000	1.000		
Independence model	.331	.215	.123	.193

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.960	.953	.991	.990	.991
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.850	.816	.842
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	34.783	5.941	71.767
Saturated model	.000	.000	.000
Independence model	3986.513	3780.379	4199.924

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	.430	.091	.016	.187
Saturated model	.000	.000	.000	.000
Independence model	10.808	10.409	9.870	10.966

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.026	.011	.038	1.000
Independence model	.261	.254	.268	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	246.783	251.063	408.759	449.759
Saturated model	342.000	359.852	1017.560	1188.560
Independence model	4175.513	4177.392	4246.624	4264.624

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	.644	.569	.741	.656
Saturated model	.893	.893	.893	.940
Independence model	10.902	10.364	11.459	10.907

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	367	397
Independence model	17	19

Parameter Summary

	Weights	Covariance	Variances	Means	Intercepts	Total
Fixed	23	0	0	0	0	23
Labeled	0	0	0	0	0	0
Unlabeled	18	2	21	0	0	41
Total	41	2	21	0	0	64

Covariance for the Default Model

		Estimate	S.E.	C.R.	P	Label
e10	<-->	e11	-.068	.023	-2.962	.003
e16	<-->	e18	.062	.019	3.203	.001

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