MODERATING EFFECT OF INFORMATION TECHNOLOGY UTILIZATION ON THE RELATIONSHIP BETWEEN SERVICE QUALITY AND CUSTOMER SATISFACTION

Charles Bosire Nyameino ✉

Moi University School of Business and Economics Nairobi, Kenya

cbosire39@gmail.com

Ronald Bonuke

Moi University School of Business and Economics Nairobi, Kenya

Thomas Kimeli Cheruiyot

Moi University School of Business and Economics Nairobi, Kenya

Abstract

The aim of this study was to determine the moderating effect of information technology communication (ICT) utilization on the relationship between service quality and customer satisfaction. Descriptive research design was adopted for this study. The target population was 6067 customers at classified star hotels in Nairobi Kenya and a sample size of 375 was obtained using proportionate sampling from categorized star hotels. Data was collected using a 5 Likert-scale questionnaire. Data was analyzed using multiple regression analysis. The study established that Service Quality (β= .194, p-value = 0.003) as a relationship marketing practice is an important elements that affect customer satisfaction. The study rejected H0$_2$ since β≠0 and p-value was less than α. The study explains 4.9% of variance above and beyond the variance by Service Quality. Service quality has a significant effect on customer satisfaction in classified star hotels and an important element to consider when making decisions. Responsiveness, good environment or ambience and reliability of services are critical for classified star hotels to improve their customer satisfaction. Hotels management should pay attention to all service quality dimensions of assurance, reliability, responsiveness, convenience and empathy.

Keywords: Service Quality, Relationship Marketing, Customer Satisfaction, Information Technology Utilization, Classified Star Hotels

INTRODUCTION

The hotel industry needs to take a proactive stance in implementing technological advances, while continually striving to build levels of service quality and customer loyalty (Magnini, Honeycutt, & Hodge, 2003). Studies conducted by the National Restaurant Association stated that 70% of a business base comes from repeat customers. The same survey shows it is getting more difficult to maintain customer loyalty. There is need in tapping into customers' needs through the use of information technology that can be instrumental in building loyalty and gaining competitive advantage (Piccoli, 2008). Five star hotels are continually competing for IT skilled employees, recently information about customers by use of Internet and there is a high amount of information that is being captured on web server logs (Garver, 2002).

Recent studies on tourism and hospitality industry have addressed service-quality issues and TQM in various ways and locations (Arasli, 2002). According to Keating and Harrington, 2003), proper extraction of this information coupled with high levels of service is what will improve service quality in classified star hotels and build competitive advantage in the sector. Piccoli, Spalding, and Ives, (2001) stated that hotels need to structure the way they think around how customers think and act. As more people are using the Internet there is a high amount of information that is being captured on web server logs (Garver, 2002). By accomplishing a customer-cantered focus, Hotels will be able to highlight their strengths and highlight opportunities for improvement. This information base can be seen through the explosion of personal and business social network sites such as LinkedIn, Facebook Twitter. Identifying patterns of current and potential customers and servicing their needs is one way that organizations are attempting to use information as a leverage tool against competitors (Magnini, etal. 2003; Piccoli, 2008). Proactive identification and implementation of these technologies can help in building a sustainable competitive advantage (Piccoli, 2008). The impression and role of information technology in the hotel industry will have strategic innovation that will spur best practices for the industry.

Garzinic (2007) on his study shows the importance of service quality in hotel industry from both the conceptual standpoint and that of service quality measurement. The search used common criteria for measuring service quality, namely the model of internal service quality and the SERVQUAL model. The systems of points criteria was used when analysing the quality of service phenomena was tied to the consumer hotel services providers. The SERVQUAL model offers a suitable conceptual frame for the research and service quality measurement in the service sector. The model has been developed, tested and adapted during various researches in the service sector. The findings from the research showed that the evaluated expectations and perceptions of hotel guests on the studied Sample shows that the average ratings for

expectations are higher than the average perception ratings in all dimensions of service quality, the gap in the dimension of empathy is the narrowest, that the expectations of hotel guests are higher than their perception a proves that the existence of a negative SERVQUAL gap. The research recommends that there is need for the application of SERVQUAL model in hotel industry is confirmed by the fact that, in the observed sample, hotel managers do not know the expectations of their guests because the dimensions of service quality they consider most important, do not match those that are most important for the clients, which is confirmed by the total SERVQUAL gap.

Previous studies have not looked into the ICT utilization and its effect on the relationship between service quality and customer satisfaction in the hospitality industry. The study therefore sought to bridge this gap by investigating moderating effect of ICT utilization in the relationship between service quality as a relationship marketing practice and customer satisfaction in classified star hotels in Nairobi Kenya.

Hypotheses & Conceptual Framework

To determine the effect of service quality on customer satisfaction and the moderating effect of Information Technology Utilization on the relationship between service quality and customer satisfaction, the relevant null hypotheses were postulated as follows:

$H0_1$: Service quality strategy has no significant effect on customer satisfaction in classified star hotels in Nairobi-Kenya

$H0_2$ ICT does not significantly affect the relationship between service quality and Customer Satisfaction in classified star hotels in Nairobi-Kenya

Figure 1. Proposed Research Model
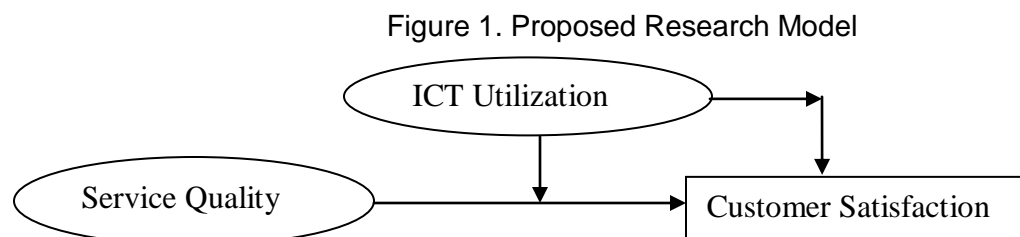
RESEARCH METHODOLOGY

The study

Study was conducted on classified star hotels in Nairobi Kenya. Descriptive research design was adopted for this study. The unit of analysis was in categorized star hotels because the study was to identify the effect of moderating ICT utilization between relationship marketing practices and customer satisfaction in categorized star hotels industry in Nairobi.

Sampling

The research took place at all sampled categorized star hotels in Nairobi. For the study population, the research used a sample of customers selected from categorised star hotels. Thus, the target population was 6067 customers at classified star hotels in Nairobi Kenya. A sample size of 375 was obtained using proportionate sampling from classified star hotels.

Data Collection

The study used primary data, the questionnaire was divided into 2 sections/ categories general information and the following variables customer satisfaction, commitment strategy, communication strategy, conflict handling and service quality. Primary data was collected through semi-structured questionnaires with a 5-point which was adopted from (Parasuraman *et al (1988)* with Likert-style scale strongly agree to strongly disagree questionnaire. The research was cross-sectional in nature because the data was gathered just once over a period of months.

Data Analysis

Data was analyzed using multiple regression analysis. The following regression model was used in data analysis .

$Y_1 = \alpha + \beta_1 X_1 + \varepsilon$ (Direct Relationship)………………………… (1)

$Y_2 = \alpha + \beta_1 X_1 + \beta_2 (X_1 M) + \varepsilon$ (Moderated Relationship)………… (2)

Where,

Y= Customer satisfaction

X_1= Service Quality

M = Information communication technology utilization

α = Constant

β_1, β_2 = Coefficients for corresponding variables

ε = Error term

EMPIRICAL RESULTS

The results show that 6 items for service quality are sorted and clustered into three components. The results of principal component analysis indicate that there are three factors whose Eigenvalues exceed 1.0. The Eigenvalue of a factor represents the amount of total variance explained by that factor. For service quality, the first factor has Eigenvalue of 3.809 and the second factor has Eigenvalue of 0.999 and the third factor had Eigenvalue of 0.617. The three factors identified for the independent variable 'service quality' explain 90.404% of the total variance. The first factor explained 63.483% of the total variance and the second factor

explained 16.643% while the third factor explained 10.278% of the total variance. The percentage of variance combines for succeeding items to make up 100% variance. The results also show the extracted sum of square loading for the factors. The values are calculated on the basis of the common variance, which is smaller than the total variance incorporating 90.404% of the variance. Rotated sum of square loadings depict the distribution of the variance after varimax rotation. Varimax rotation tries to maximize the variance of each of the factors, so the total amount of variance accounted for is redistributed over the extracted factors. Principal component analysis with varimax rotation is widely adopted as a reliable method of factor analysis.

Kaiser-Meyer-Olkin (KMO) has a measure of 0.765 which is above the threshold of 0.5. The Bartlett's is significant for service quality with Chi-Square = 1168.322 (p-value < 0.05). This confirms the appropriateness of the factor analysis for service quality.

Table 1. Rotated Component Matrix for Service Quality

	Component		
	1	2	3
This hotel provides more effective assured service quality compared to others	.315	.869	.167
I am delighted with this hotel's service responsiveness , willingness that are available and convenient service more than others	.830	.465	-.137
I am satisfied with this hotel's tangible appearance, equipment and communication materials or utilities	.131	.798	.457
This hotel offers with quite a range of service that customers need	.875	.201	.336
I appreciate the accuracy and reliability of services of this hotel compared with other hotels in the area	.267	.351	.860
I am satisfied with this hotel's empathy, caring and attention to customers	.870	.107	.366

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.765
Bartlett's Test of Sphericity	Approx. Chi-Square	1168.322
	Df	15
	Sig.	.000

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 10 iterations.

First factor exhibited heavy loadings for three items that consisted of I am delighted with this hotel's service responsiveness, willingness that are available and convenient service more than others (0.830), this hotel offers with quite a range of service that customers need (0.875), and I am satisfied with this hotel's empathy, caring and attention to customers (0.870). This factor can

be called 'responsiveness' as the factor loadings are heavy on items related to its response to customer needs. The second factor loads heavily on two items which consists of this hotel provides more effective assured service quality compared to others (0.869) and I am satisfied with this hotel's tangible appearance, equipment and communication materials or utilities (0.798). This factor can be called 'environment or ambience' because items that the factor heavily loads on are related to its capability as informed by surroundings and physical facilities. The third factor loads heavily on two items which consists of I am satisfied with this hotel's tangible appearance, equipment and communication materials or utilities (0.457), and I appreciate the accuracy and reliability of services of this hotel compared with other hotels in the area (0.860). This factor can be called 'reliability' as the factor loadings were heavy on items demonstrating ability to offer reliable service.

Using moderated multiple regression analysis, the moderating effect of the variable Information Technology Utilization was analyzed by interpreting the R^2 change in the models obtained from the model summaries and the regression coefficients for the product term obtained from model summaries. Variance-inflation factor (VIF) and tolerance were used to test for multicollinearity among the predictor variables. Multicollinearity statistics show that the tolerance indicator for Service Quality, Information Technology Utilization, and Service Quality*Information Technology Utilization were all greater than 0.1 and their VIF values were less than 10. These results indicate that no multicollinearity problem occurred.

The results show that for model 1, R = 0.344, R2 = 0.118 and F= 36.467 (p=0.000). Model 2 shows the results after inclusion of product term (Service Quality*Information Technology Utilization) in the equation. The results also show that inclusion of product term resulted in R^2 change of 0.049. The results show presence of moderating effect. The moderating effect of Information Technology Utilization explains 4.9% of variance above and beyond the variance by Service Quality. Thus it can be concluded that the study rejected $H0_2$ because $\beta \neq 0$ but p-value is less than α.

Table 2. Model summary results of moderating effect Service Quality and Customer Satisfaction

Model	R	R Square	Adjusted R Square	Std. Error	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.344[a]	.118	.115	.58622	.118	36.467	1	272	.000	
2	.409[b]	.167	.161	.57079	.049	15.908	1	271	.000	1.724

a. Predictors: (Constant), Service Quality

b. Predictors: (Constant), Service Quality, Information Technology Utilization

c. Dependent Variable: Customer Satisfaction

Figure 3. Regression output of moderating effect Service Quality and Customer Satisfaction

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2.628	.253		10.389	.000		
	Service Quality	.361	.060	.344	6.039	.000	1.000	1.000
2	(Constant)	2.213	.267		8.273	.000		
	Service Quality	.069	.093	.066	.738	.461	.387	2.582
	Information Technology Utilization	.397	.100	.355	3.989	.000	.387	2.582

a. Dependent Variable: Customer Satisfaction

The study established that Service Quality (β= .194, p-value = 0.003) as a relationship marketing practice is one of the most important elements that affects customer satisfaction. Thus, it can be concluded that the study rejected *H0₂: Service quality has no significant effect on customer satisfaction in classified star hotels in Nairobi-Kenya* since β≠0 and p-value was less than α. The results revealed that a positive change in service quality will lead to a statistically significant positive change in customer satisfaction. Important factors of service quality include responsiveness, environment or ambience and reliability of services to customers.

CONCLUSION

The study concluded that service quality has a significant effect on customer satisfaction in classified star hotels in Nairobi-Kenya. Service quality is therefore an important element to consider when making decisions in regard to the effect of relationship marketing and customer satisfaction. Responsiveness, good environment or ambience and reliability of services are critical for classified star hotels to improve their customer satisfaction.

RECOMMENDATIONS

It is recommended that Hotels management should pay attention to all service quality dimensions of assurance, reliability, responsiveness, convenience and empathy. This study recommends that relationship marketing practitioners should review their perception on utilization of information communication technology. ICT utilization has been shown to moderate the relationship between relationship marketing and customer satisfaction.

On service quality the study recommends Hotel management should pay attention to all service quality dimensions of assurance, reliability, responsiveness, convenience and empathy while the relationship marketing practitioners should review their perception on utilization of information communication technology.

The study recommends that Managers should not only focus on customer satisfaction but hotel managers need to understand what customers want, how they assess service quality and how to deliver the desired customer satisfaction. Customer loyalty can be achieved when customer's stated and unstated needs are fulfilled by the managers of the hotels.

The study provides to hotel managers, the government of Kenya and other stakeholders in hotel industry with current and updated data in formulating appropriate policies and coming up with solutions to emerging issues in the sector on matters of communication and customer satisfaction. This study will help all stakeholders to formulate more rational strategies aimed at attracting and retaining customers, this research contributes to a better appreciation and understanding of communication and customer satisfaction related factors.

REFERENCES

Arasli, H., (2002). Gearing total quality into small-and medium-sized hotels in North Cyprus. *Journal of Small Business Managemen*t 40 (4), 350–359.

Garver, M. (2002). *Using data mining for customer satisfaction research. Marketing Research,* 14, (1), 8-13

Garzinic, (2007). Concepts of service quality measurement in hotel industry: Impact of Customer Satisfaction and Relationship Quality on Customer Retention: A Critical Reassessment and Model Development, *Psychology & Marketing,* Vol. 14, Issue 8, Page 737–764

Magnini, V., Honeycutt, E., & Hodge, K. (2003). Data mining for hotel firms: Use and limitations. *Cornell Hotel and Restaurant Administration Quarterly,* 44, (2), 94-105.

Piccoli, G. (2008). Information technology in hotel management: A framework for evaluating the sustainability of IT-dependent competitive advantage. *Cornell Hospitality Quarterly*, 49, (3), 282

APPENDICES

Appendix 1

Service quality Scale	1	2	3	4	5
This hotel provides more effective assured service quality compared to others					
I am delighted with this hotel service responsiveness , willingness that are available and convenient service more than others					
I am satisfied with this hotels tangible appearance, equipment and communication materials					
This hotel offers with quite a range of service that customers need					
I appreciate the accuracy and reliability of services of this hotel compared with other hotels in the area					
I am satisfied with this hotels empathy, caring and attention to customers					

Appendix 2

Service Quality_ Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.809	63.483	63.483	3.809	63.483	63.483	2.400	39.993	39.993
2	.999	16.643	80.126	.999	16.643	80.126	1.782	29.703	69.695
3	.617	10.278	90.404	.617	10.278	90.404	1.243	20.709	90.404
4	.261	4.349	94.753						
5	.189	3.155	97.907						
6	.126	2.093	100.000						

Extraction Method: Principal Component Analysis.