TECHNOLOGY INFRASTRUCTURE: A CUSTOMER RELATIONSHIP MANAGEMENT DIMENSION IN MAINTAINING CUSTOMER LOYALTY

Maureen Kangu ✉

School of Management and leadership, Management University of Africa, Kenya

mkangu@mua.ac.ke, kangumaureen@gmail.com

Kenneth Lawrence Wanjau

School of Business, Karatina University, Kenya

George Kosimbei

School of Business, Kenyatta University, Kenya

Robert Arasa

School of Business, Catholic University of East Africa, Kenya

Abstract

With intense competition among hotels, the study sought to assess the influence of technology infrastructure on customer loyalty as a strategy in Customer Relationship Management (CRM) in the hotel industry in Kenya. The study used the non-experimental cross-sectional survey design. A total of 147 hotels listed in the Kenya Association of Hotel Keepers and Caterers (KAHC) guide 2014 were studied. A census sampling technique was used. The respondents comprised of 147 customer relationship managers or equivalent. Semi structured questionnaires were used to collect primary data. Qualitative and quantitative techniques were used to analyze the data. The findings indicated that the hotel industry had effective technology infrastructure and that technology facilities were a key determinant of customer loyalty. The study concluded that technology infrastructure in the hotel sub sector in Kenya were key determinants to customer loyalty. The study recommends that the hotel management ensures that the hotels are

upgraded with the technological changes taking place in the whole world; the management conducts a market survey of the technological facilities in use in other hotels so as to minimize high competition from the competition.

Keywords: Customer Relationship Management, Customer Loyalty, Technology, Strategy, Competition

INTRODUCTION

The business environment is more dynamic today than it was 50-60 years ago (Anderson, 2011). These changes during the last century have led businesses into a new direction. The rise in globalization has led to demand of new products and services (Knight, 2000). The concept of maintaining effective relationship with customers has been slow, but rapid advancements in Information Communication Technology (ICT) and data warehousing concepts, increased awareness of customers and the intense market competition has now given new dimensions to this domain (Intralak & Olssson, 2012).

From an operations perspective, Bose (2002) pointed out that Customer Relationship Management (CRM) is an integration of technologies and business processes that are adopted to satisfy the needs of a customer during any given interaction. Technology infrastructure is necessary to enhance CRM. Nakata & Zhu (2006) defined technology infrastructure as the shared technology resources that provide the platform for the firm's specific information system applications. This infrastructure includes investment in hardware, software, and services such as consulting, education, and training that are shared across the entire firm or across entire business units in the firm.

Chen and Popovich (2003) point out that the reason for increased popularity of CRM is mostly due to the promising benefits it offers in the form of improved company's performance and long term customer retention for obtaining healthier financial payoffs. Greenberg (2001) emphasized that CRM can increase the true economic worth of a business by improving the total lifetime value of a customer, adding that successful CRM strategies encourage customers to buy more products, stay loyal for longer periods and communicate effectively with a company. Curry and Kklou (2004) refer the benefits for adoption of CRM which include the following; customers from the competition will come to prefer your organization. In addition, a simplified, customer-focused internal organization will simplify the infrastructure, thereby shrinking the workflow and eliminating the non-productive information flow. This will lead to profitability and more satisfied customers leading to a more compact, focused company.

Dickie (2009) surveyed over 1,700 companies worldwide, and found that only 16.1% of the CRM practicing companies reported increased revenues as a result of CRM system usage while the majority of firms or 83.9% did not efficiently utilize the CRM tools they had in place. Furthermore, widespread application of CRM programs has not increased customer retention rates (Thomas & Kumar, 2004).

Companies have spent a lot of money on CRM system, software and structure, but the returns have not been substantial. It is worth noting that for CRM to be considered effective, it must realize return on investment. Given the undesirable facts and diversity of CRM theories, it is really necessary to study the successes and failures of CRM dimensions all over the world, then to construct an integrated theory regarding CRM.

Research Problem

The tourism industry in Kenya has experienced fluctuating times over the years. Generally, it has grown significantly with hotel bed availability growing [Kenya National Bureau of Statistics (KNBS), 2015]. However, the actual bed occupancy per year is still below 50%. This can largely be attributed to an increasingly competitive market from other countries in Africa. This calls for the greater need for the hotels to differentiate and retain their customers.

Recent advances in information technology have provided the tools for marketing managers to create a new generation of customer relationship management tactics. Vogt (2011) opines that although there is an ever-increasing use of CRM in the tourism sector, there are still limited researches investigating its variety of applications in such significant industry. Several researchers have also alluded to the importance of conducting studies on CRM dimensions in the hotel sector, such as (Akroush, Dahiyat, Gharaibeh & Abu-Lailet, 2011; Sadek, Yousef, Ghoneim, & Tantawi, 2011; Sin, Tse & Yim, 2005). As a result, this study sought to determine the role of customer relationship management dimensions on customer loyalty in the hotel industry in Kenya.

Research Objective

The objective of this study is to assess the influence of technology infrastructure on customer loyalty in the hotel industry in Kenya.

LITERATURE REVIEW

This study sought to assess the influence of technology infrastructure on customer loyalty in the hotel industry in Kenya.

Technology Infrastructure

Many companies are having trouble in retaining their existing customers especially in the commerce environment because of their dissatisfaction. It is also getting even harder to create customers that are loyal to a particular company. This is due to the scarcity of investment in CRM that enhances well-built relationship between companies and their customers (Seyed, Farzana, Ahasanul, & Ali, 2011). Investment in CRM related technology does not only improve the customer service but more importantly it can deliver value to the customers that will boost customer retention rate and customer loyalty (Bose, 2002).

The rate of technological change in the marketing environment is utmost important factor that influence on relationship-marketing success (Zineldin, 2000). The internet especially has been changing so rapidly and has been providing so many advanced technologies for doing businesses to manage customer relationships in an organized and right way. Since relationships can be obtain through customer services which provide one to one marketing and ongoing interactions, it is critical for any company to pay close attention on delivering excellent customer service by influential communication tools at any time and continuously improve their customer support to ensure long-lasting relationships with their existing customers. Therefore in this era of technology, technology plays a significant role in increasing customer service levels by providing new sort of service delivery, strengthen customer intimacy, responding faster to customers' needs and affording customers the opportunity to help themselves (Mulligan & Gordon, 2002).

Some technologies that contribute in enhancing CRM are mostly communication tools used in providing customer service which includes intelligent e-mail system, voice through Protocol (VoIP), voice recognition equipped interactive voice response (IVR), IP-based call centers and other web capabilities like web chat, web callback and video conferencing and some other tools which are coming day by day. There are also other non-communication tools like order tracking system, personalized web pages and web forms that gives to the customer good experience (Mulligan & Gordon, 2002).

Whilst the potential benefits are attractive, CRM implementation must be managed carefully to deliver results. In order to successfully embed CRM, system users should be involved and expectations managed (Gefen & Ridings, 2002). Business processes need to be changed as well as technology (Swift, 2002 & Goodhue, Wixom, & Watson, 2002), with two interconnected processes, that is, knowledge management and interaction management, seen as key by Zablah, Bellenger, and Johnston (2004). The former process uses marketing intelligence to build and maintain a portfolio of profitable customer relationships, feeding into the latter process which leverages the intelligence to ensure the quality of individual exchange

episode. The rapid growth of information technology (IT) has not only changed the ways that information is collected and used, but also the ways in which businesses are conducted. The next step in this trend will be to use customer relationship management infrastructure to find out what customers value and tailor the service to their particular needs (Montgomery & Smith, 2009).

Theoretical Review: Social Network Theory

Barnes, (1954) Social Network Theory views social relationships in terms of nodes and ties. Nodes are the individual actors within the networks, and ties are the relationships between the actors. There can be many kinds of ties between the nodes. In its most simple form, a social network is a map of all of the relevant ties between the nodes being studied. The network can also be used to determine the social capital of individual actors. These concepts are often displayed in a social network diagram, where nodes are the points and ties are the lines.

From the organizations' viewpoint, use of social network channel can enhance relationship to customers (Cheung, Chiu, & Lee, 2010, Cheung & Lee, 2009,). Social network is used to gather information from customers, analyze customer information, and respond to customers faster. Prior research on social network has mainly focused on individual perspectives such as the impact of social influence, social presence, behaviour and benefits (Cheung, Chiu & Lee, 2010, Cheung & Lee, 2009).

Based on this theory, technology infrastructure is necessary for any business to capture their customers' data, needs and complaints. Customer orientation is also necessary as it is a link between the nodes and ties. The Social Network Theory is therefore suited to study if technology infrastructure and customer orientation have a role to play on customer loyalty.

Conceptual Framework

The key variables in this study were categorized as independent variable (Technology Infrastructure), and dependent variable (Customer loyalty). According to Mugenda (2008) the independent variables predict the amount of variation that occurs in another variable. The dependent variable, on the other hand is influenced or changed by another variable.

Figure 1. Conceptual Framework

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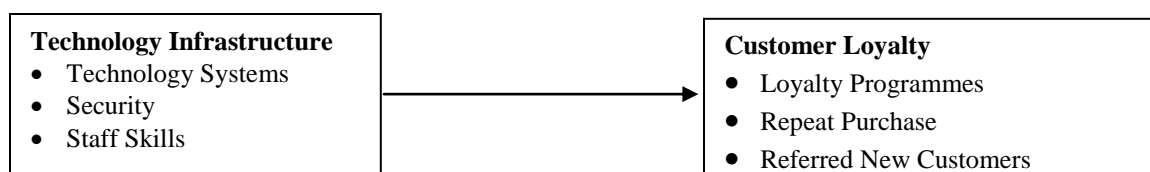
Empirical Literature

A study was done by Aliyu, Sany and Rushami, (2011) in Malaysia to test a model that can explain the impact of technology based CRM on inbound call center performance. To do this, data were collected from 168 call center managers and analyzed through structural equation modeling. The research findings indicate that technology based CRM significantly affects first call resolution and perceived service quality, but weakly influence caller satisfactions through the mediating role of first call resolutions. Observably, this research believes that customer contact centers as the first touch points to company are dependent on other factors such as company policy, product quality, customer characteristics, etc. to influence caller satisfactions, but unfortunately most of these factors fall outside the operational control of contact center activities. The findings in this research has empirically provided the long waiting evidence that technology based CRM applications within the inbound contact center industry can only influence caller satisfactions through first call resolution and perceived service quality. A major implication for call center managers is that this research findings has availed them the opportunity on how to effectively develop, implement, and evaluate their CRM applications.

Many scholars, that is, Goldenberg (2003), Anton and Petouhoff, (2002), Shanmugasundaram and Munusamy, (2008) and Gupta, Sharma and Rashid, (2009) have characterized CRM as the integration of mainly three crucial components of people, process and technology to satisfy customers' needs. Goldenberg (2003) has asserted that successful implementation of CRM relies on the right combination of these aspects to touch the targeted customers from any point in an organization.

A study by Khurana in 2010 pointed out that CRM is often mistakenly assumed as mainly software. It can be, though, the idea behind it is that CRM is basically an approach that organizations take to initiate and retain their relationships with customers (Khurana, 2010). Such approach then can be driven by technology and data that organizations set out in order to manage their relationships, (Khurana, 2010). However, Williams and Curtis (2006) have asserted that 55 to 75 percent of CRM projects fail since, organization often confuse CRM strategy with technology implementation. They then defined CRM as a broad business concept in which technologies act as enablers. A successful CRM is an outcome of an effective and proactive management of the right integration between three components of people, process and technology with a particular aim of satisfying segmented customers' needs. The study thus hypothesized;

$H_0 1$: Technology infrastructure has no significant effect on customer loyalty in the hotel industry in Kenya.

Customer Loyalty

Customer loyalty can be said to be the behaviour of repeat customers, as well as those that offer good ratings, reviews, or testimonials (Kumar & Shah, 2004). It is not only about customers doing a particular company a great service by offering favourable word of mouth publicity regarding a product/service, telling friends and family, but also, it is a process, a program, or a group of programs geared toward keeping a guest happy so he or she will provide more business. The ultimate goal is to develop happy customers who will return to purchase again and persuade others to use that company's products or services. This equates to great cost savings and profitability to the company through the keeping of current customers against attracting new ones as well as making stakeholders happy (Kotler & Gertner, 2002).

Building customer loyalty leads to positive outcomes such as augmented sales, a reduction in costs, more foreseeable profit flows and increased competitive advantage and is critical to a firm's survival and growth. This is consistent with customer relationship management (CRM) theory which argues that a firm's overriding strategy should be the attraction and retention of profitable customers, because loyal customers will, in the long-term, buy more and pay a premium for doing business with those they trust and like (Peppers & Rogers, 2001).

RESEARCH METHODOLOGY

This study used cross-sectional survey of selected hotels and lodges in Kenya. Cross sectional surveys are versatile in nature and therefore provide accurate means of assessing information while enabling the researcher to confirm whether or not there are significant causalities among the variables (Zikmund, 2003).

The target population in this study comprised of 147 hotels and lodges listed in the Kenya Association of Hotel Keepers and Caterers Guide 2014. The respondents comprised of 147 Customer Relationship Managers or their equivalent. This study used a census sampling technique.

Primary data was collected by use of a self-administered semi structured questionnaire with a five-point Likert scale. Saunders, Lewis and Thornhill (2009) point out that because each respondent is asked to respond to the same set of questions; the Likert scale provides an efficient way of collecting responses from a large sample prior to quantitative analysis.

A pilot test was carried out to check the validity and reliability of the questionnaires. The purpose of pilot testing was to establish the accuracy and appropriateness of the research design and instrumentation (Saunders, Lewis & Thornhill, 2009). Validity refers to the extent to which a scale measures what it is intended to measure (Bryman, 2012). Factor analysis, with varimax rotation (Hair, 2010), was conducted on the necessary scales in order to check that

concepts were uni-dimensional. Items with factor loadings of less than 0.4 were dropped from the questionnaire and not included in the final research. Zandi (2006) states that a factor loading equal to or greater than 0.4 is considered adequate. All the ten statements attracted a coefficient of more than 0.4 hence were retained in the questionnaire.

Reliability was tested using questionnaires duly completed by ten managers (10) randomly selected. These respondents were not included in the final study sample in order to control for response biasness. The questionnaire responses were input into statistical package for social sciences (SPSS) and Cronbach's alpha coefficient generated to assess reliability. The closer Cronbach's alpha coefficient is to 1, the higher the internal consistency reliability (Sekaran, 2008). The statements in technology infrastructure were tested and the initial Cronbach's alpha coefficient determined to be 0.237 which was below the acceptable threshold. Two statements with the lowest Cronbach's alpha coefficients were dropped in order to improve the Cronbach coefficient. The final Cronbach's alpha coefficient was 0.546. Field (2013) says a score above 0.5 indicates that the variables used in the data collection process were reliable.

Quantitative techniques were used to analyze the data. The data from the questionnaires was coded and the response on each item put into specific main themes. The data obtained from the research instruments was analyzed using Statistical Package for Social Sciences (SPSS). Other applications software used were Ms-Excel Windows 8 for case cleaning, variable screening and as a transit package in that the data from SPSS version 21 was saved in Ms-Excel first for it to be exported to SmartPLS; Analysis of Moment Structures (AMOS) version 21, which is essentially analysis of mean and co-variance structures, for initial EFA, Confirmatory Factor Analysis (CFA), generation of fit models, Path Analysis and Structural Equation Modeling (SEM); STATA version 12.0 to test for assumptions of the variables used in the analyses; and R-GUI version 2.10.0 for building plots, for instance box-plots using the Ggplot2 package, and for univariate and multivariate testing of outliers in the dependent variable. Lastly, ATLAS was used for qualitative analysis.

ANALYSIS AND RESULTS

Data analysis was conducted using a two-phase process consisting of confirmatory measurement model and confirmatory structural model. Structural equation modeling (SEM) is distinguished from confirmatory factor analysis (CFA) by the fact that in CFA, there are no directed arrows between latent factors (Schumacker & Lomax, 2004). In other words, while in CFA factors are not presumed to directly cause one another, SEM often does specify particular factors and variables to be causal in nature. In the context of SEM, the CFA is often called 'the

measurement model', while the relations between the latent variables (with directed arrows) are called 'the structural model'.

The Role of Technology Infrastructure on Customer Loyalty in Hotels in Kenya

Technology, in this study, was operationalized by the technological systems available in the hotels, the security of the technological infrastructure and the staff skills on the use of technology.

Technology Systems available in the hotels

Majority (99%) of the respondents indicated their hotels had Hotel Brand Websites, 82% made use of online reservations, another 76% made use of Voice through Internet Protocol (VOIP), Interactive Voice Response (IVR), Web Chat, Web Callback, Order Tracking System, personalized web pages, and IP-based call centers. Seventy two percent of the respondents said their hotels made use of intelligent e-mail system, 65% had Wi-fi Hotspots, 39% made use of video conferencing, 38% used the online check in check out system while a few (16%) said their hotels made use of Radio-Frequency Identification (RFID).

This implies that technology infrastructure in the hotel industry is of utmost importance. Hotels must embrace the latest technology for competitive advantage. Technology is ever changing and as such provides a variety of systems for doing businesses to manage customer relationships efficiently and effectively. Strategic use of technology infrastructure provides hotels with the ability to monitor and predict purchasing habits of current customers, future customers and clusters of customers. Technological systems also provide hotels with a platform to gain competitive and strategic advantage by better understanding the needs and wants of their customers thus enhancing customer loyalty.

Security Systems

The majority (98%) of the respondents indicated that they used the Physical security systems, 92% used the Anti-virus security systems, 80% used the Hardware firewall security systems while 74% used the Software firewall security systems and the Non-reusable password security systems. Another 42% made use of the Encrypted log-in security systems, 31% used the Internet scanning security systems, 26% used the File encryption security systems, 15% used the Intrusion detection security systems, 12% used the Image server security systems and the Digital ID server security systems, 11% used the Vulnerability assessment scanning security systems while a few (5%) used the Biometric security systems. No respondent indicated that their hotel used the Honeypot security systems.

The findings of this study show that many hotels are keen on installing security systems to ensure their customers feel safe and free to utilize the available technology infrastructure; however, most security systems are still not being utilized. This could be attributed to high costs of installations and frequent upgrades of the security systems due to changing technology. Though this contributes to achieving strategic business objectives, the high costs are a barrier. Installing technology infrastructure goes hand in hand with concern for protecting data security and privacy. For all the businesses transacted online, internet security is a major concern.

The Use of Technology Systems

The majority (55%) agreed that their hotels had sufficient technological facilities, 33% of the respondents were neutral while a few (12%) said that their hotels did not have sufficient technological facilities. Lack of or inadequate technology facilities is a failure in implementation of an important CRM strategy, showing lack of CRM initiatives in an organization. If new entrants with better implementation of the strategy access that market, the organization would lose out, denying superior value for the company and the customer.

Majority (52%) of the respondents said that Technology plays a significant role in increasing customer service levels and enhancing customer loyalty, 28% of the respondents were neutral while a few (20%) of the respondents said that Technology did not play a significant role in increasing customer service levels and enhancing customer loyalty

Security

The majority (38%) of the respondents said that their Hotels were not keen on practicing data security and privacy while a few (31%) of the respondents agreed that their Hotels were keen on practicing data security and privacy. Another 31% of the respondents remained neutral. The results concur with the findings of Brewer, Kim, Schrier and Farrish (2008) in their study on Current and Future Technology Use in the Hospitality Industry where Protecting data security and privacy represented the most important issue related to installing new technologies. Secure data enables organizations to produce, through CRM technology, accurate analysis of customer revenue and cost data to identify current and future high value customers, in turn enabling organisations to target their direct marketing efforts better.

Majority (58%) of the respondents said that their hotels had their own established ICT departments, 10% of the respondents remained neutral while a few (32%) of the respondents said that their hotels did not have their own established ICT departments. While 32% is a quite a big percentage of negative responses, it can only be hoped that most of these respondents outsource IT services. Otherwise, the companies would find themselves unable to cope in the

turbulent and dynamic technology-based market. Brewer, Kim, Schrier and Farrish (2008) in their study on Current and Future Technology Use in the Hospitality Industry when comparing hotels with their own IT departments to those without, it was found that those with IT departments were more likely to use a wide array of information systems security systems. This could enhance customer service satisfaction levels amongst hotels and lodges in Kenya.

The respondents were also asked whether the cost of upgrading security system was budgeted for in their hotels. Majority (33%) of the respondents disagreed, 35% remained neutral, while a few (32%) of the respondents agreed that the cost of upgrading security system was budgeted for in their hotels. This is a worrying trend, cognizant of the dynamism in the IT field. With outdated systems, some crucial IT activities, for instance, capturing relevant product and service behaviour data, creating new distribution channels, developing new pricing models, processing transactions faster and providing better information to the front line would not be carried out competently, or would totally fail.

Staff Skills

Majority (43%) of the respondents agreed, 22% of the respondents were neutral, while a few (35%) of the respondents disagreed. From the findings, an almost equal number answered both in the positive and in the negative. This could be attributed to the fact that highly skilled people are costly to employ on the one hand, and much less costly on the other, considering the benefits, skills and experience (and consequently organizational success) they bring with them to the new firm. When asked whether their hotels had employed enough skilled personnel, majority (48%) of the respondents indicated that their hotels had not employed enough skilled personnel, 24% of the respondents remained neutral while a few (28%) of the respondents said their hotels had employed enough skilled personnel. The contradiction here comes with "enough". How much is enough? This might have prompted the majority to disagree with the statement. The respondents were also asked whether they gave on the job training to their staff on the use of technology, majority (70%) of the respondents concurred with the statement, 16 % of the respondents were neutral while a few (14%) of the respondents disagreed. The overwhelming majority (70%) that concurred to the respective statement is an indicator that proper training in IT is a skill that makes an organization attain success.

The study findings imply that the implementation of new technologies require the hoteliers to also adjust their organizational structure and improve employees and management skills in order to achieve high levels of efficiency. It is imperative that hoteliers accordingly adjust for instance, their organizational structure, human capital needs, operational strategies and technologies in tandem with the challenges that come with the processes and implementation of

CRM. Given that improved customer profitability might imply high revenue and business performance, indeed managers and hotel owners that have not effectively utilized CRM systems yet, can increase their organizational profitability by integrating CRM and investing to enhance CRM capabilities.

Confirmatory Measurement Model

The first phase involved CFA that evaluates the measurement model on multiple criteria such as internal reliability, convergent, and discriminant validity. For convergent validity, the factor loadings should be 0.7 and above, to guarantee that the construct has convergent validity (Hair, 2010). In this study, the average loadings are more than 0.7, implying that they are high enough to be convergent. To establish discriminant validity, one needs to show that measures that should not be related are in reality not related. None of the loadings in this study is greater than 0.7 thus demonstrating discriminant validity.

Prior to CFA, was the exploratory factor analysis (EFA) whose key steps included the computation of factor loading matrix, communalities and principal components analysis (PCA). A simplified factor loading matrix or a pattern matrix is a matrix containing the coefficients or "loadings" used to express the item in terms of the factors, that is, interpretation of factors (Rummel, 1970). Rummel (1970) further asserts that the pattern matrix loadings are zero when a variable is not involved in a pattern, and close to 1.0 when a variable is almost perfectly related to a factor pattern. In this study the pattern matrix coefficients ranged from 0.548 to 0.950 thus showing variables are almost perfectly related to a factor pattern. The extraction communalities were all greater than 0.3 and thus acceptable as this means that the variables fitted well with other variables in their factor. Principal Components Analysis (PCA) extracts maximum variance from the data set with each component. The factors were able to explain 69.470% of the total variance in the data. The five factors in the initial solution have eigenvalues greater than 1.0, with the threshold being eigenvalue greater or equal to 1.0.

Prior to carrying out EFA, two statistical tests which assess the factorability of data or suitability of data for structure detection were performed, that is, Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's Test of Sphericity. The KMO value is 0.844 which is close to 1. This means factor analysis is suitable. With $p < 0.05$ in the Bartlett's Test of Sphericity, this is an indication of suitability of data for structure detection. Therefore the overall measurement Model is presented in Figure 2.

Figure 2: Confirmatory Measurement Model
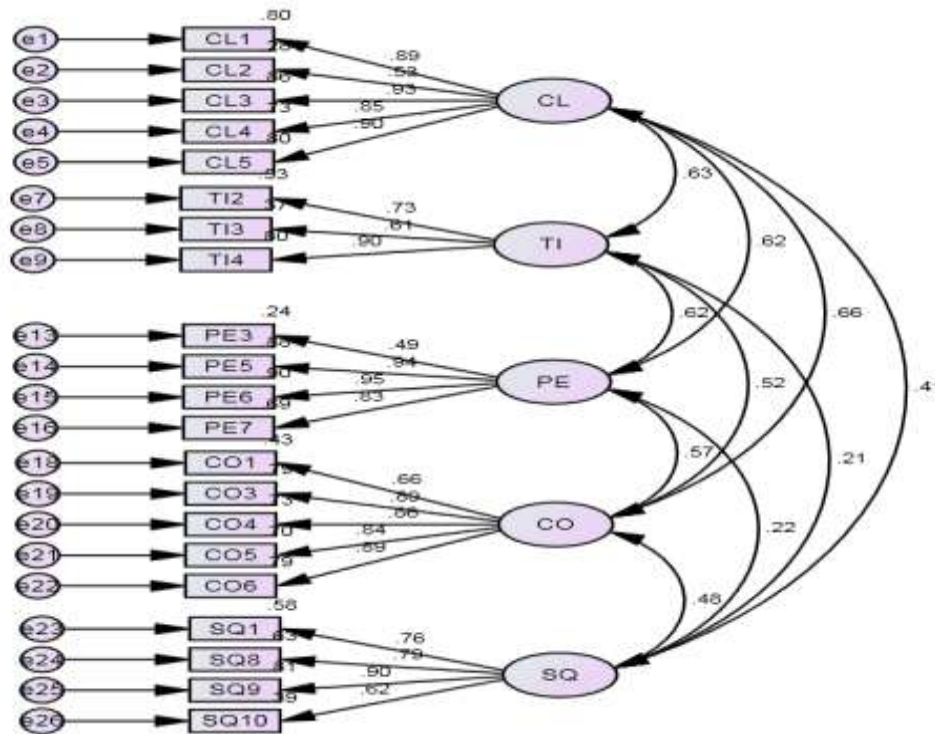
Confirmatory Structural Model

The second phase involved latent variables structural equation modeling (SEM) to test the hypothesized relationships and to fit the structural model. Structural equation modeling (SEM) is a very general, chiefly linear, chiefly cross-sectional statistical modeling technique (Schumacker & Lomax, 2004). Factor analysis, path analysis and regression all represent special cases of SEM. In this study, SEM was used to test hypotheses and to fit the theoretical model.

Each model variable was tested for outliers and normality on variables aspects. This was followed by model fit testing. In SEM, the fit indices establish whether, overall, the model is acceptable, and if acceptable, researchers then establish whether specific paths are significant (Moss, 2009). This study considered the two types of fit statistics that are commonly used, that is, absolute fit indices and incremental fit indices (Hair, 2010). For absolute fit indices, the study picked on Goodness-of-Fit Index (GFI), Adjusted Goodness-of-Fit Index (AGFI) and Root-Mean-Square Error of Approximation (RMSEA) and Chi Square value (CMIN). Goodness-of-Fit Index (GFI) is used to measure the amount of variance and covariance in the observed correlation matrix that is predicted by the model-implied correlation matrix. Values between 0.90 and 1.0 are indicated acceptable (Arbuckle & Wothke, 1999). Adjusted Goodness-of-Fit Index (AGFI) corrects the GFI, which is affected by the number of indicators of each latent variable. Values

for the AGFI also range between 0 and 1.0 and it is generally accepted that values of 0.90 or greater indicate well-fitting models. Root-Mean-Square Error of Approximation, RMSEA, assesses how poorly the model fits the data by considering the error of approximation, which concerns the lack of fit of the researcher's model to the population covariance matrix. Values up to 0.08 indicate reasonable fit to the data. If the samples are large, values of less than 0.10 are also acceptable. The Chi square is the minimum discrepancy between the model and the observed data. Relative Chi square or Normed chi square CMIN/DF adjusts CMIN for model complexity. The relative chi square value of less than 2 indicates an acceptable model fit (Ullman, 2001).

For incremental fit indices, the study used the Comparative Fit Index (CFI). The CFI assumes that all latent variables are uncorrelated, that is, independent model and compares the sample covariance matrix with this independent model (Kline, 2005). The values for this statistic range between 0.0 and 1.0 with values closer to 1.0 indicating good fit. Indeed, a value of CFI greater than or equal to 0.95 is presently recognized as indicative of good fit. The results are shown in table 1.

Table 1. Model Fit Indices for the Influence of Technology Infrastructure
on Customer Loyalty

Model	CFI	GFI	AGFI	RMSEA	CMIN	DF	CMIN/DF
Default model	0.910	0.830	0.739	0.121	7.927	7	1.132
Saturated model	1.000	1.000			0.000	0	
Independence model	0.000	0.360	0.232	0.356	1037.631	15	69.175

The hypothesis to test for this specific objective was:

H_{01}: Technology infrastructure has no significant role on customer loyalty in the hotel industry in Kenya.

In order to test the statistical significance T-value was calculated. To get the t-value, you divide the standardized estimate by the standard error. In this case $\frac{0.634}{0.131} = 4.8397$ which is greater than 2. The threshold for t-value is 2 (Fisher, 1926). This study found that there was a positive relationship between technology infrastructure and customer loyalty. This was demonstrated by technology having the standardised estimate of 0.63 with a standard error of 0.131. In this regard, H_{01} was rejected. The test for significance for this model is shown in figure 3

Figure 3 Significance Test Result for the Influence of Technology
Infrastructure on Customer Loyalty.
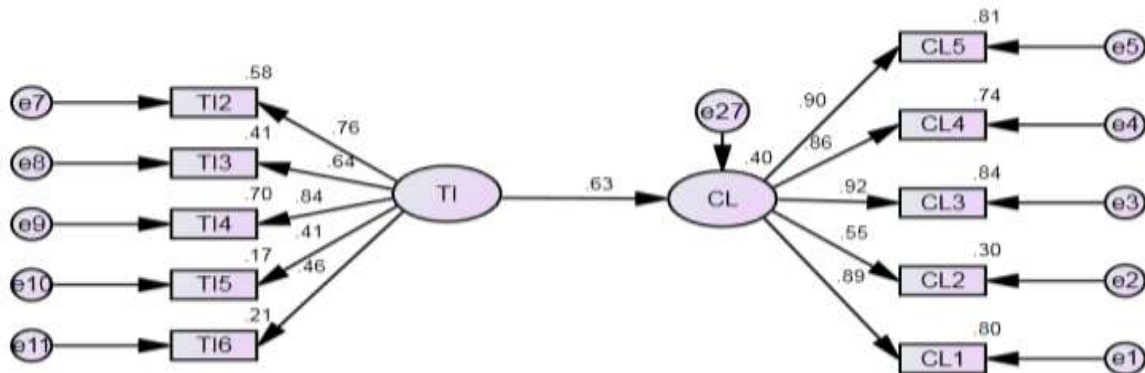
Therefore this model was significant at 95% significance level (α-level 2.5% for a 2-tailed test) with t=4.8397 since the threshold for t statistics is 2. Popular α-levels are 10% (0.1), 5% (0.05), 1% (0.01), 0.5% (0.005), and 0.1% (0.001) (Fisher, 1926). The findings agree with those of Aliyu, Sany and Rushami, (2011) who did a study in Malaysia to test a model that can explain the impact of technology based CRM on inbound call center performance. Their findings indicated that technology based CRM significantly affects first call resolution and perceived service quality, but weakly influence caller satisfactions through the mediating role of first call resolutions. This is indicative that businesses can enhance their relationships with customers through technology infrastructure leading to greater customer satisfaction, loyalty, retention and profitability.

DISCUSSION OF FINDINGS

Technologies infrastructure had a positive relationship with customer loyalty in the hotel industry in Kenya. Consequently, the null hypothesis was rejected. Technological infrastructure also had a statistically significant influence on customer loyalty in the hotel industry in Kenya. The findings also indicated that the hotel industry had effective technological facilities and infrastructure. This observation was arrived at since the hotel industry had effective reservation systems and the employees had adequate knowledge on how to use the systems. In addition, hotels had effective internal controls and good and accurate billing systems. These factors highly influenced customer loyalty in the hotel industry. The results revealed technology facilities was a key determinant of customer loyalty.

The findings are consistent with those of Aliyu, Sany and Rushami, (2011) who did a study in Malaysia to test a model that can explain the impact of technology based CRM on inbound call center performance. The research findings indicated that technology based CRM

significantly affects first call resolution and perceived service quality, but weakly influence caller satisfactions through the mediating role of first call resolutions. To achieve competitive advantage through customer loyalty, the hotels need to install state of-the-art technology systems and be vibrant in monitoring the technological environment in order to be informed of new technologies.

RECOMMENDATIONS

Technology infrastructure should be accorded special attention as they have shown to have a great impact on customer loyalty. Investing in technology will enable these firms experience customer loyalty through re-purchase intentions. This study therefore recommends that firms need to invest in technology infrastructure for competitive advantage.

Factors associated with technology need to be enhanced by including them in the mission and vision statements of firms and making them part of their code of conduct as the study has demonstrated a high statistical relationship between technological infrastructure and customer loyalty. The organizations should put in place a well-documented technology strategic plan.

Technology is advancing at a faster pace than ever before changing both the expectations of hotel customers as well as the way the hotel industry conducts its business. Technology has become critical to attracting and retaining hotel guests. Some of the recommended trends for the Hotel Industry include Wi-Fi infrastructure overhauls, Digital conference facilities, Mobile communication and automation, Near Field Communication (NFC) technology that gives users the ability to exchange data between devices, Robots and infrared sensors, Smart room keys, Entertainment on tap Cloud services, Feedback on social media and integrated seamless experiences through the internet of things technology.

AREAS FOR FURTHER STUDY

The study relied on cross-sectional data survey where the respondents were asked to assess viewpoints on the item in the instrument. But some success factors of CRM are known to be strategic and dynamic in nature. Therefore, a longitudinal study would be more preferable as it could provide a better perspective in addition to further informing the policy frameworks of CRM.

The findings presented in this study are based on evidence gathered from the hospitality industry. Future research should be extended to financial and educational institutions whose CRM issues closely relate to those of the hospitality industry.

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