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RESEARCH ARTICLE

SERVING GLOBAL CUSTOMERS: ADOPTION OF (e-CRM) BY SMALL AND MEDIUM ENTERPRISES (SMEs) IN KENYA

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ABSTRACT

Practice has shown that the Internet and other information and communication technologies (ICTs) offer astonishing opportunities for innovation in customer relations management by offering businesses the potential to extend their markets beyond their nations, regions, continents and enable them reach and serve any customer in the global market place, and thus increase their revenue base. Consequently the application of e-business methods in Electronic Customer Relations Management (e-CRM) provides such an opportunity for Small and Medium Enterprises (SMEs). Unfortunately, the adoption of e-CRM by SMEs has been slow and uneven between regions. It is for this reason that this paper investigated, the factors that can influence e-CRM adoption by SMEs to enable them enjoy the same benefits like the large companies of being enabled to reach and serve customers in any part of the globe.

INTRODUCTION

Electronic customer relationship (e-CRM) is a comprehensive business and marketing strategy that integrates technology, people, process, customers and all business activities for attracting and retaining customers over the internet, mobile phone, and other electronic technologies to reduce costs and increase profitability by consolidation the principles of customer loyalty(Wahab, Jusoff, Momani, Noor, and Zahari, 2011). East Africa's economic landscape conspicuously reflects the dominance of small and medium enterprises (SMEs) in wealth and job creation. However, the uptake of e-CRMby SMEs in Kenya has been slow. Consequently, the SMEs need to take advantage of the Internet which is changing the world, and has impacted the model of people life style, working learning and entertainment in several fundamental ways. For many business, the Internet has become an important channel to collect, store, display, release and discriminate information(Wahab *et al.,* 2011).This change demands the abandonment of traditional business model to embrace ways that the internet technology can be used to modernize and improve business management effectiveness including the use of electronic customer management. e-CRM helps firms to better understand customer needs, develop customer centric programs for satisfying needs, and offer enhanced value through managing customer information and needs. However, despite the fact that successful businesses run e-CRM for effective competitiveness, little has been done to establish factors that determine use of e-CRM by the Kenyan SMEs. Building on a surprisingly sparse literature regarding the factors influencing adoption of e-CRM, the researcher defines a conceptual framework to empirically assess the factors that influence adoption of e-CRM among SMEs in Kenya to aid them in serving global customers.

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Literature Review

Information technology offers the potential for substantially improving administrative performance of enterprises (Curley, 1984). Electronic Customer Relationship Management (e-CRM), for example, is an Information Technology (IT) driven concept used to design the business and its processes around the customers' wants and needs (Burghard and Galimi 2000). The CRM market is said to have grown over 70% in 2002, and was expected to become worth over $20 billion by 2006, representing an annual growth rate of almost 30% (Wardley and Shiang, 2000). Although information about the size of the e-CRM market seems to abound in the business press, limited information exists about the progress of diffusion of the CRM innovation. (Firth and Swanson 2001)

Focusing on the customer is becoming a key factor for companies, big and small, to survive in the global market. It is said that it takes up to five times more money to acquire a new customer than to get an existing customer to make a new purchase. Therefore, customer retention is in particular important to SMEs because of their limited resources (Adrian,

2002). The essence of the information technology revolution and, in particular, the World Wide Web provides many business opportunities to SMEs. These include building better relationships with customers than has been previously possible in the offline world. By combining the abilities to respond directly to customer requests and to provide the customer with a highly interactive, customized experience, companies have a greater ability today to establish, nurture, and sustain long-term customer relationships than ever before. The ultimate goal is to transform these relationships into greater profitability by increasing repeat purchase rates and reducing customer acquisition costs. However the approaches to obtaining loyalty in electronic markets and forging profitable ties with the customers over a technological interface are many and varied. Most of the firms either providing customer relationship management (CRM) technologies or implementing them properly are doing brisk business (Gopalkrishnan and David, 2004)

The debate of customer relationship management (CRM) and electronic markets has received increased status both in the academic and trade circles as well as in business adoption of customer relationship management (CRM) technologies. However there are many prospects associated with adoption of electronic CRM of which such performance opportunities are often ruined by users' unwillingness to accept and use available systems (Rigby, Reichheld and Schefter, 2002). East Africa's economic landscape conspicuously reflects the dominance of SMEs. Among other things, SMEs utilize local resources and exert little pressure on limited foreign currency reserves. But they also provide employment to more than 50 percent of all employed labour force in East Africa countries. In Kenya 49 % of employment is by SMEs. They are also accountable for more than 50 % of manufacturing gross domestic product (Mead and Liedholm, 1998). SMEs also contribute to the economy in terms of output of goods and services, creation of jobs and production of labour force (Marwanga, Okomo and Epstein, 2006). SMEs are, therefore, very important to the Kenyan economy. Indeed, Kenya government considers the SME sector a major source of future employment generation but it must increase its competitiveness and performance for it to fulfil its role in employment creation (Ronge, Ndirangu and Nyagito, 2002).

One major way SMEs in Kenya can do this is by using e-CRM. Research has reported many benefits of using e-CRM by businesses around the world. In a recent study (Sims, 2000). Anderson Consulting found that as much as 64% of the difference in return on sales between average and high performing companies is attributable to e-CRM performance. Electronic CRM helps firms to better understand customer the needs, develop customer centric programs for satisfying needs, and offer enhanced value through managing customer information and needs, and providing customized products and services (Iyer, Anthony, Dhruv and Giordano, 2002). It is because of all these that this study sought to identify the factors that influence adoption of electronic customer relationship management (e- CRM) by SMEs in Kenya.

Theoretical Framework and Hypotheses

Modelinge-CRM Technology Acceptance Process

User technology acceptance and usage behaviour have received extensive attention from information system (IS) researchers. Several theoretical models and frameworks have been employed to explain IT usage (Kukafka, Johnson, Linfante, and Allegrante, 2003). Such theories include Technology Acceptance Model (TAM) (Davis, 1989), Innovations Diffusion Theory (DIT) (Rogers, 1995), Theory of Planned Behavior (TPB), (Fishbein and Ajzen, 1975) and Theory of Reasoned Action (TRA) (Fishbein and Ajzen, 1975). Among these the technology acceptance model (TAM) (Davis, 1989; Davis, Richard, and Paul, 1989), proposed by Davis in 1986 in his doctoral thesis, is the most widely applied model of user acceptance and use.

The Research Model

The proposed research model below attempts to answer the general research question: what are the key factors that influence SME decision to adopt e-CRM technology?

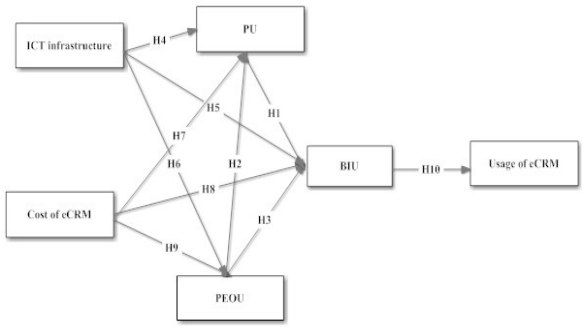


Fig. 1: The Research Model (A modified TAM)

The theoretical model for this study uses the Technology Adoption Model (Davis 1989) as the foundation on which an adjusted framework is studied for e-CRMadoption by SMEs in Kenya. The main difference between the researcher's model and Davis' model is that, the researcher's model introduces ICT and Cost as additional factors in addition to the SME sector context. Links have been made between these additional factors and Behavioural Intention to adopt e-CRM as well as PU and PEOU of e-CRM. In assessing user acceptance, the researcher used BIU as the dependent variable because TAM hypothesises behavioural intention as the main determinant of usage behaviour (Davis, 1989).Additionally this study has included actual usage of e-CRM as dependent variable.

The Research Hypotheses

This research aims at finding out the factors influencing e-CRMadoption by SMEs and the interrelationships of these factors for comprehensive understanding across SMEs in Kenya. The outcomes of the study will provide insights to researchers and policy enactors interested in adoption of e-CRMby the Small and Medium-scale Enterprises. In order to realize these aims the following hypotheses were tested:

H1: Perceived Usefulness is positively associated with Behavioural Intention to use e-CRM

H2: Perceived Usefulness is correlated positively with Perceived Ease of Use (PEOU) of e-CRM technology

H3: PEOU is positively associated with BI to use e-CRM

H4: *Availability of e-CRM related ICT infrastructure is correlated positively with PU of e-CRM technology*
H5: *Availability of e-CRM related ICT infrastructure is positively associated with BI to use e-CRM*
H6: *Availability of e-CRM related ICT infrastructure is correlated positively with PEOU of e-CRM technology*
H7: *Cost of adopting e-CRM is correlated positively with PU of e-CRM technology*
H8: *Cost of adopting e-CRM is positively associated with BIU to use e-CRM*
H9: *Cost of adopting e-CRM is correlated negatively with PEOU of e-CRM technology*
H10: *BIU is correlated positively to actual usage of e-CRM technology*

METHODOLOGY

The study used a survey design of personal delivered self-administered questionnaires. The population of study comprised of 129,962 SMEs in Nairobi which were divided into five sample locations.

Population and Sampling Design

In this study, the population consisted of all SMEs in Nairobi. According to Central Bureau of Statistics (CBS), ICEG and K-Rep (1999) Medium and Small Enterprises (MSE) Baseline survey results, the total number of enterprises per 1,000 residents of the Kenyan population is 43 SMEs. The Baseline survey results showed that there were approximately 92,160 SMEs in Nairobi in 1999 and a total of 1.3 million SMEs in the entire country employing 2.4 million people. According to Republic of Kenya (2006), the city of Nairobi had a human population of 2,143,254 in the 1999 national census and an inter-census growth rate of 4.8% per annum. The same MSE Baseline survey results indicated that trade SMEs form 61.5% of all SMEs in the urban areas. A combination of sampling techniques was employed in selecting the sample. This included multistage sampling, random sampling, stratified sampling, systematic sampling and snowball sampling. According to Thietart, Xuereb, Zarlowski, Royer, Perret, Milano *et al.* (2001) and Pervez and Kjell (2002). Selects elements from each cluster. Constructing the clusters is the first stage. Deciding what elements within the cluster to use is the second stage. The technique is used frequently when a complete list of all members of the population does not exist. The complete sample size for this study with a population of 25,992 should have been approximately 350 SMEs. However, due to the constraints of time and cost, a sample of 300 SMEs was used. Table 3.1 gives the breakdown.

Table 1. Sample Size

Location of Business	Totals
Central Business District	60
Westlands	60
Kasarani	60
Zimmerman	60
Githurai	60
Totals	300

In this study each of the identified locations (Central Business District, Westlands, Kasarani, Zimmerman and Githurai region) was represented by a sample size of 60 SMEs in each target area to make a total of 300 samples. Table 1 above shows the sample according to each region.\

Data Collection Methods

The final version of the questionnaire was administered to the respondents in the selected sample locations. Data collection was carried out at the business premises of the selected locations. Completed questionnaire forms, were collected on the same day. Each question within each part was rated on a scaling of 1 – 7 (1 = strongly disagree and 7 = strongly agree) then followed by a demographic section on the business profile. The researcher used statistical software for social sciences (SPSS) version 15.0 as the analytical tool and path analysis using AMOS 7.0.

Data Analysis and Results

The collected data was obtained from ordinal and nominal variable types and statistically analysed using descriptive statistics, frequencies, regression and path analysis. A total of 237 out of 300 interviewees filled out and returned the questionnaires which represented a 79% response rate.

Descriptive statistics

Figure 2 shows the distribution of SMEs in the sample across various sectors. From the results we see that the service industry is the dominant industry that occupies 47%. This sector is therefore one with the greatest need to adopt e-CRM.

Fig. 2. Distribution of SMEs Various Industries

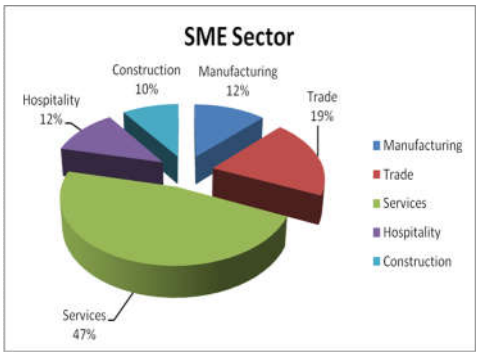


Figure 3 shows the mean scores of the various ICT sued by SMEs. From the results we see that none of the electronic technologies is used very frequently. This clearly shows the need to motivate SMEs to adopt e-CRM.

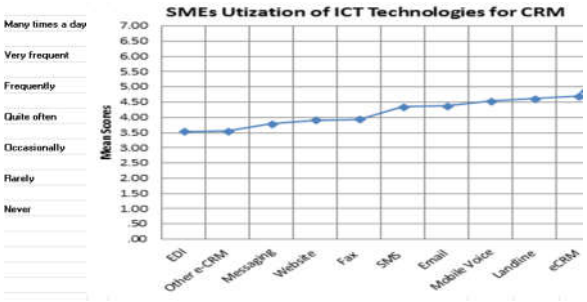


Fig. 3. The Mean Scores of ICT used in e-CRM

From the results of Figure 4shows percentage of SMEs using various ICT in e-CRM. It is evident that only about 25% of SMEs use e-CRM many time a day, while 10% have never used e-CRM. Further, only about 13% of SMEs use website many time a day, while 19% have never used Websites. This results give us the picture that majority of the SMEs are not using e-CRM in their business to reach local and global customers.

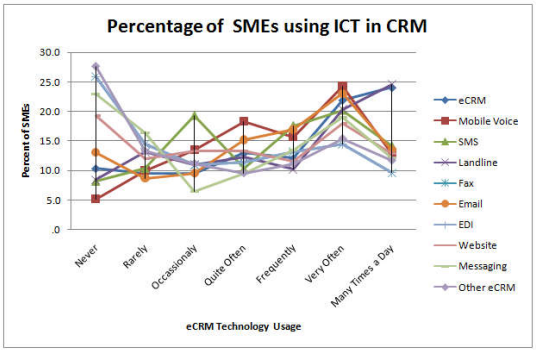


Fig. 4: Percentage of SMEs Using Various ICT in e-CRM

Table 2 shows the correlation values for the variables used in the analysis. It can be observed that availability of ICT infrastructure (INF) had the greatest influence on PEOU.

Table 2. Correction Matrix

	e-CRM	USE	BIU	PU	PEOU	INF	COST
e-CRM	1						
USE	.336**	1					
BIU	0.065	.264**	1				
PU	.240**	.250**	.293**	1			
PEOU	.172*	.271**	.176**	.187**	1		
INF	.154*	.283**	.248**	0.103	.671**	1	
COST	-0.01	0.089	.713**	.243**	0.077	0.099	1

a. **. Correlation is significant at the 0.01 level (2-tailed)
b. *. Correlation is significant at the 0.05 level (2-tailed).

loadings that did not load to their respective variable were removed from the final analysis.

Fit Indices Result of the Research Model

The fit indices of this study results generated from the model shown in Figure 5are shown in Table 4these fit indexes are: x2 , d.f., p, Normed x^2, GFI, RMSEA, AGFI, NFI, TLI, and AIC which are commonly used in the literature were used to test model fit. The best fit was acquired when availability of ICT infrastructure linked to PU, and also that of cost link to PEOU were was removed from the model. The commonly used measures of model fit, based on results from an analysis of the structural model, are summarized in Table 4.

Model Evaluation Using Goodness-of-Fit Indices

Several researchers have pointed out that while fit indices are a useful guide for structural model evaluation, itsexamination should also be with respect to substantive theory. When model fit is allowed to drive the research process, there is danger of moving away from the original purpose of theory testing of structural equation modelling. The other weakness with fit indices is the fact they may indicate to a well-fitting model, yet in the real sense, elements of the model may fit poorly (Hooper *et al.* 2008:53). From Table 4, the Fit indices of the research model shown in Figure 5 are summarised in Table 4. Looking at the results of Normed x^2, RMSEA, GFI, and AGFI in Table 4, we can see that the research model is sufficiently stable. Consequently, the subject of fit indices 'rules of thumb' is extremely topical now with some researchers in the subject proposing for a complete rejection of fit indices altogether (Barrett, 2007:815). On the other hand others are less hesitant to denounce the usefulness of fit indices but do agree that

Table 3: Final Factor loadings and Cronbach's Alpha

Variable	Items	Component					Chronbac's Alpha	Comments
		1	2	3	4	5		
	e-CRM1	.171	.080	.422	**.662**	-.116		
e-CRM	e-CRM2	.058	.026	-.038	**.844**	.203	0.729	Very Good
	e-CRM3	.045	.252	.167	**.752**	-.168		
	internt1	.121	.183	**.717**	-.013	-.097		
Actual Usage	internt2	.089	.031	**.827**	.092	.179	0.817	Very Good
Of e-CRM	internt3	.084	.180	**.835**	.121	-.060		
	internt4	.152	.064	**.679**	.158	.222		
Behavioural	biu3	.121	.249	.263	-.146	**.701**	**0.629**	Good
Intention	biu4	.059	.112	-.018	.092	**.890**		
	pu2	.036	**.771**	.110	.111	.145		
	pu3	.124	**.692**	.212	.080	.015		
Usefulness	pu4	-.009	**.857**	.106	.000	.091	0.873	Very Good
(PU)	pu5	.014	**.846**	-.006	.065	.149		
	pu6	.099	**.845**	.064	.085	-.026		
	peou4	**.694**	.135	.059	.081	-.073		
Perceived Ease	peou5	**.666**	.062	.096	-.014	-.081	0.809	Very Good
Of Use (PEOU)	peou6	**.763**	.117	-.030	.084	-.029		
	peou7	**.699**	.110	.122	.111	.172		
ICT	infrast1	**.579**	.063	-.053	-.049	.320		
Infrastructure	infrast2	**.651**	.089	-.052	.015	.024		
	infrast3	**.771**	-.066	.172	.129	.000	0.790	Very Good
	infrast4	**.744**	-.174	.198	.006	.053		
	infrast5	**.646**	-.028	.280	-.019	.144		

a. Extraction Method: Principal Component Analysis.; b. Rotation Method: Varimax with Kaiser Normalization.c. Rotation converged in 5 iterations.

Reliability and Validity

Table 3shows the factor loadings from factor analysis and Cronbach's Alpha valuesfor the variable constructs items for the instrument used in the final statistical analysis. Factor strictly adhering to suggested cut off values may result to the likelihood of Type I error where the incorrect rejection of an acceptable model occurs (Marsh et al, 2004:326). However, the debate on fit indices is on-going, it is improbable that fit

Table 4. Fit Indices of the research model

Model Fit Measures	Cut Off	Model Values	Fit Measures' Indications	Interpretation
Absolute Fit measures				
			<1	Over fit
Normed $x^2 = X^2/df$	5.0	0.905	1 - 5	Good fit
			>5	Over fit
Root Mean Square Error of		0.000	0.0	exact fit
Approximation (RMSEA)	0.08		<= about 0.05	close fit
			<= about 0.08	reasonable
			> 0.1.	Over fit
Incremental Fit measures				
Goodness of Fit Index (GFI)	>0.90	0.996	0 -1,	Fit
			close to 1	Perfect fit.
			>1	upper bound 1
Adjusted goodness of Fit Index	.>0.90	0.974	<1	very good fit
(AGFI)			1	Perfect fit.
			>1	over fit
Parsimony				
Parsimony goodness of Fit	0.4	0.142	0- 1,	Fit
Index (PGFI)			close to 1	Very good fit.
			> 1	over fit

indices will become defunct any time soon and for this reason, we have used them from an informed position, in this study in the evaluation of our research model. Based on several researchers guidelines and the above review, in the evaluation of the research model of this study we shall select a few suitable indices as recommended by Arbuckle, (2006: 535) and Hooper *et al.* (2008:53). These include Chi-Square statistic, its degrees of freedom and p value, the RMSEA and its associated confidence interval, the RMR, the GFI, AGFI and one parsimony fit index such as the PGFI. These indices have been chosen over other indices study since they have been recommended by other researchers, as they have been found to be the most insensitive to sample size, model misspecification and parameter estimates.

Model Chi-square (χ2) and Normed χ2

Barrett (2007:815) argues that "the chi-square exact fit test is the only substantive test of fit for SEM, but, its sensitivity to discrepancies from expected values at increasing sample sizes can be highly problematic if those discrepancies are considered trivial from an explanatory-theory perspective". Due to the Chi-square limitations for both large and small sample sizes, researchers have sought alternative indices to assess model fit. The most common statistic that reduces the effects of sample size on the Model Chi-Square is Normed chi-square (χ2/df) (Hooper *et al.* 2008:54). Although there is no consensus regarding an acceptable ratio for this statistic, recommendations range from as high as 5.0 (Wheaton et al. 1977:99) to as low as 2.0 (Tabachnick and Fidell, 2007 quoted in Hooper *et al.* 2008:54). Consequently, the model Normed chi-square (χ2/df) =2.715, which is less than 5.0 and hence proves that the model fits the data.

Root Mean Square Error of Approximation (RMSEA)

The Root Mean Square Error of Approximation (RMSEA) is the second fit statistic that was also used in the evaluation of the research model. The RMSEA indicates how well the model, with unknown but optimally selected parameter estimates would fit the population's covariance matrix (Byrne, 1998 quoted in Hooper *et al.* 2008:54). Researchers in recent years have regarded RMSEA as 'one of the most informative fit indices' due to its sensitivity to the number of estimated parameters in the model (Diamantopoulos and Siguaw, 2000: 85 quoted in Hooper *et al.* 2008:54). Consequently, RMSEA favours parsimony by selecting the model with the fewer number of parameters. Over the last fifteen years, recommendations for RMSEA cut-off statistics have been reduced significantly. Until the early nineties, an RMSEA in the range of 0.05 to 0.10 was considered a suitable indication of good fit and values above 0.10 were considered a poor fit (Hooper *et al.* 2008:54). Later, RMSEA values from 0.08 to 0.10 were considered a poor fit while below 0.08 was a good fit (MacCallum et al, 1996 quoted in Hooper *et al.* 2008:54). More recently, the RMSEA cut-off value close to .06 (Hu and Bentler, 1999 quoted in Hooper *et al.* 2008:54) or a stringent upper limit of 0.07 (Steiger, 2007) is regarded by researchers as the consensus amongst research authorities in this subject (Hooper *et al.* 2008:54). Consequently, RMSEA statistics are reported in conjunction with confidence interval values, where a well-fitting model would have the RMSEA lower limit close to 0 while the upper limit should be less than 0.08 (Hooper *et al.* 2008:54). The results for this study model was RMSEA=0.000, which is below 0.8 and hence considered acceptable.

Goodness-of-fit Statistic (GFI) and the Adjusted GFI -(AGFI)

The Goodness-of-Fit statistic (GFI) is a substitute to the Chi-Square test. It calculates the amount of variance that is accounted for by the estimated population covariance (Tabachnick and Fidell, 2007 quoted in Hooper *et al.* 2008:54). Traditionally a general cut-off point of 0.90 has been recommended for the GFI statistic. However, researchers who have used simulation studies have indicated that when factor loadings and sample sizes are low, a higher cut-off value of 0.95 is more appropriate (Hooper*et al.* 2008:58). As with the GFI, statistics, the AGFI values also range between 0 and 1 and it is commonly accepted that values of 0.90 or more show well-fitting models (Hooper *et al.* 2008:54). Given the often detrimental effect of sample size on these two fit indices, they are not relied upon as a stand-alone index, however given their historical importance they are often reported in

covariance structure analyses. The results for GFI=0.996 and that of AGFI=0.974, both show that the study model is well fitting.

Indirect, Direct and Total Influence of Factors

Figure 5 present a complete nomological network of the determinants of of the e-CRM by SMEs. While cost has been found to have a direct influence on Behavioural Intention, in this study a new variable, availability of ICT infrastructure, which is critical to developing economies, has been established to have a direct and significant influence on Behavioural Intention.

Indirect, Direct and Total Influence of Factors on BIU

The indirect, direct and total influence of cost, availability of ICT infrastructure, PU and PEOU influence on BIU outcomes were summarised in Table 5, which shows the indirect, direct and total effects of variables on behavioural intention. From the results of Table 5, which were obtained by a path analysis technique, we note that three variables with the greatest direct influence on BIU in order of their dominance include cost of e-CRM, availability of ICT infrastructure, and Perceived Usefulness (PU). Using the variables that had direct and significant effects on PU yielded the estimated linear Equation 1.

Equation 1: BIU Regression Linear Equation
BIU =0.665*COST +0.163*INF + 0.117*PU + Error

Table 5. Total Effects of Factors on Behavioural Intention (BIU)

Variable	Direct	Indirect	Total
INF	0.163	0.014	0.177
COST	0.665	0.027	0.692
PEOU	0	0.021	0.021
PU	0.117	0	0.117

Indirect, Direct and Total Influence of Factors on USE:

All the variables, that is cost, availability of ICT infrastructure, PU, PEOU, and BIU haddirect influence on use of e-CRMoutcomes and were summarised in Table 6, which shows the indirect, direct and total effects of variables on actual usage of e-CRM. From the results of Table 6, which were obtained by a path analysis technique, we note that Cost has a negative influence and BIU has the greatest direct influence on actual Usage of e-CRM. Using the variables that had direct and significant effects on USE yielded the estimated linear Equation 2.

Equation 2: PU Regression Linear Equation
USE =0.15*INF -0.179*COST + 0.086*PEOU - 0.186*PU + 0.28*BIU + Error

Table 6. Total Effects of Factors on Actual usage of e-CRM (USE)

Variable	Direct	Indirect	Total
INF	0.15	0.128	0.278
COST	-0.179	0.236	0.057
PEOU	0.086	0.04	0.126
PU	0.186	0.033	0.219
BIU	0.28	0	0.28

Indirect, Direct and Total Influence of Factors on PEOU

The indirect, direct, and total influence of cost and availability of ICT infrastructure were summarised in Table 7.

Table 7. Total Effects of Factors on Perceived Ease Of Use (PEOU)

Variable	Direct	Indirect	Total
INF	0.659		0.659
COST			

From the above results, which were obtained by a path analysis technique, we note that availability of ICT infrastructure (INF) had the greatest effects on PEOU. Consequently using the regression weights that were significant yielded the estimated linear Equation 3:

Equation 3: PEOU Regression Linear Equation
PEOU=0.659*INF + Error

Indirect, Direct and Total Influence of Factors on PU

The indirect, direct, and total influence of COST, INF, PEOU factors on PU were summarised in Table 8.

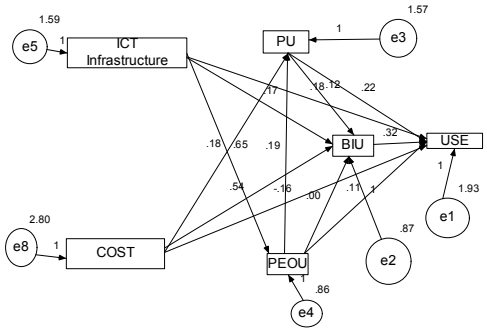
Table 8: Total Influence of Factors on perceived Usefulness (PU)

Variable	Direct	indirect	Total
INF		0.119	0.119
COST	0.226		0.226
PEOU	0.181		0.181

From the above results, which were obtained by a path analysis technique, we note that COSTvariable had the greatest direct and significance influence on PU Consequently using the regression weights that were significant yielded the estimated linear Equation 4.

Equation 4:PU Regression Linear Equation
PU=0.226*COST + 0.119*PEOU + Error

This path analysis process resulted in a more stable model with the indices meeting required thresholds shown in Table 4. The resulting model is shown in Figure 5, which is an output from AMOS7.0. Most of the non-significant paths were omitted to improve the clarity of the model.



Chi-Square=2.715 (Degrees of Freedom=3) CMIN/DF=.905
Probability=.438, RMSEA=.000, TLI=1.009, CFI=1.000, IFI=1.002,
NFI=.985, RMR=.075, GFI=.996, AGFI=.974, PGFI=.142,
AIC=38.715, PGFI=.142, PCFI=.200

Fig. 5: Results of Path Analysis

Nomological validity is the degree to which a new measure fits lawfully into a network of expected relationships (Straub *et al.* 2004). For the factors measures that influence the adoption of e-CRM in this study, it was indicated by showing that the predicted theoretical relationships containing the investigated constructs were significant. We therefore demonstrate that the scales used to measure the underlying construct, proved that the predictions of the formal theoretical network were proved by the empirical data analysis. This was

done by looking at the path analysis from the results of SEM using AMOS 7.0 shown in Table 9 and Figure 5.

Results of Hypothesis Testing

Path analysis statistical techniques in Structural Equation Modelling (SEM) were used in establishing the influence of cost (COST), ICT infrastructure (INF), Perceived Usefulness (PU) of e-CRM and Perceived Ease of Use (PEOU) on both Behavioural Intention to use e-CRM and actual usage of e-CRM (USE). The results are shown in Table 9. The findings show that cost of e-CRM, has a positive and significant influence on perceived usefulness of e-CRM, behavioural intention to use e-CRM, and the actual usage of e-CRM. On the other hand availability of ICT infrastructure has a positive and significant influence on perceived ease of use(PEOU) and behavioural indirect, direct and total influence intention to use e-CRM. The research model findings explained 62.7 percept of the SMEs intention to accept e-CRM, with good model fit. This study produced useful insights into the factors that influence e-CRM acceptance decisions by SMEs and provided new ideas in the understanding of e-CRM diffusion in SMEs. Theoretical, methodical contributions and practical implications of the findings are presented.

Table 9: Regression Weights from Path Analysis

Path			Estimate	S.E.	C.R.	P	Label
PEOU	<---	INF	.647	.048	13.539	***	par_3
PU	<---	PEOU	.191	.066	2.919	.004	par_1
PU	<---	COST	.177	.049	3.640	***	par_2
BIU	<---	INF	.175	.064	2.737	.006	par_5
BIU	<---	COST	.535	.037	14.358	***	par_6
BIU	<---	PU	.121	.048	2.517	.012	par_11
BIU	<---	PEOU	.000	.065	-.002	.999	par_12
USE	<---	BIU	.318	.096	3.305	***	par_4
USE	<---	COST	-.164	.076	-2.160	.031	par_7
USE	<---	PU	.217	.073	2.994	.003	par_8
USE	<---	INF	.181	.097	1.875	.061	par_9
USE	<---	PEOU	.106	.097	1.092	.275	par_10

Thus, five out of ten hypotheses, seven were supported by the empirical results shown in Table 9, which are summarized in Table 10.

Table 10: Results of Hypothesis testing

Hypothesis	*Results*
H1: Perceived Usefulness is positively associated with Behavioural Intention to use e-CRM	*Supported*
H2: Perceived Ease of Use (PEOU is correlated positively with) Perceived Usefulness (PU) of e-CRM technology	*Supported*
H3: PEOU is positively associated with BIU to use e-CRM	*Not Supported*
H4: Availability of e-CRM related ICT infrastructure is correlated positively with PU of e-CRM technology	*Not Supported*
H5: Availability of e-CRM related ICT infrastructure is positively associated with BIU to use e-CRM	*Supported*
H6: Availability of e-CRM related ICT infrastructure is correlated positively with PEOU of e-CRM technology	*Supported*
H7: Cost of adopting e CRM is correlated positively with PU of e CRM technology	*Supported*
H8: Cost of adopting e-CRM is positively associated with BIU to use e-CRM	*Supported*
H9: Cost of adopting e-CRM is correlated negatively with PEOU of e-CRM technology	*Not supported*
H10.BIUis correlated Positively with actual usage (USE) of e-CRM technology	*Supported*

DISCUSSION

In this research, we have empirically investigated the factors of cost, perceived usefulness of E-CRM, perceived ease of use (PEOU), and availability of ICT infrastructure on behavioural intention to use (BIU) e-CRM and their influence on SMEs adoption of e-CRM. Despite the fact that the outlined explanatory variables are deeply rooted in the existing technology adoption literature except and availability of ICT infrastructure, there is limited empirical evidence (mainly anecdotal), addressing their influence in e-CRM adoption in the context of SMEs in a developing country. Based on a sample of 237 SMEs, our empirical results confirm the enabling role of availability of ICT infrastructure and perceived usefulness of e-CRM, and the hindering influence of the cost of e-CRMin adoption and actual usage of e-CRM. This agrees with Wahab *et al.* (2011) who found that usability was positively significant towards e-CRM performance.

Our research study's contributions are on several levels. First, our research provides further empirical evidence of the relevance of cost of e-CRM and external variable of availability of ICT infrastructure as enablers of technology adoption in general and in particular e-CRMin the context of SMEs, Second, this study moves us closer to understanding in as scientific a manner as possible the drivers and barriers for SMEs adoption of e-CRM. This result prompts us to argue that the Internet enabled e-CRMin the SMEs context has been not only driven by the quest for reaching the global customer but also the need to provide the customer with adequate, accurate and timely information on products and services on a global scale.

Conclusion

Results from a structural equation modelling analysis established a positive correlation between availability of ICT infrastructure, Behavioural Intention to use of e-CRM and Perceived Ease of Use of e-CRM, as well as actual usage of e-CRM. Since availability of ICT infrastructure is an external variable beyond the control of any SME, We can conclude that the general availability of ICT infrastructure including internet and broadband wireless internet is a driver for e-CRM and other e-transaction process based adoption. On the other hand the cost of e-CRM influences perceived usefulness of e-CRM, Behavioural Intention to use of e-CRM and Perceived Ease of Use of e-CRMas well as actual usage of e-CRM. However we note that cost of e-CRM indicates its usefulness on one hand, but has a negative effect on affordability and hence on actual usage of e-CRM. The study concluded that the four factors Perceived Ease of Use (PEOU), Cost, availability of related ICT infrastructure and Perceived Usefulness (PU) influence SMEs in making decisions of adopting e-CRM. All except Cost had a direct effect on the actual usage of e-CRM.

Recommendations

The researcher recommends setting up of policies that promote use of e-CRM by SME. Such policies include provision of low cost or subsidised ICT infrastructure to Kenyan SMEs and Internet and wireless Broad Band. Further affordable e-CRM solutions need be made available to SMEs for use to serve global markets. It would be more informative if further research is conducted widely across the country to minimize

any potential chance of bias as well as identify any other factors that affect the adoption of e-CRM by SMEs in Kenya.

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