The Impact of Customers Perception on Cost of Internet Banking on Its Usage in Commercial Banks in Kenya

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Abstract: **Internet banking allows banks to provide information and offer services to their customers conveniently using the internet technology. However, studies have shown that customers have perceptions that impact on the uptake and continuous usage of the platform. The purpose of this study is to understand the effect of customer perceptions on usage of internet banking in commercial banks in Kenya. This study used descriptive research design while a stratified random sampling technique was used to select subjects to represent the target population which was made up of 1,837,312 customers of commercial banks within Nairobi County. An estimated 384 respondents were targeted to participate in the study. 272 questionnaires representing a 71% response rate were received and analysed. Based on the findings of the research it was concluded that customers have perception that have an effect on usage of internet banking, Customer still feel that internet access fees and internet banking transaction charges are high. Costly internet access and unreasonable pricing of internet banking transactions, hinders usage of the internet and by extension technological solutions offered by commercial banks such as internet banking. Commercial banks can relook into the issue of subsidizing the monthly internet banking maintenance fee so as to attract more users and continued usage.**

Keywords: **Internet banking, commercial bank, Technology Acceptance Model, customer perceptions.**

1. INTRODUCTION

The introduction of information technology (IT) has led to the fast growth and development in the service sector making it one of the leading worldwide (Gonza´lez, Dentiste, & Rhonda, 2008). The most noticeable example is in the banking industry, where through the introduction of IT related products in internet banking, electronic payments, security investments and in addition information exchange (Berger, 2008), banks provide more diverse services to customers with less manpower. The fruition of banking technology has largely been driven by changes in distribution channels as evidenced by the introduction of e-channels such as automated teller machine (ATM), tele-banking, PC-banking and most recently internet banking by commercial banks (Gallup Consulting, 2008). E-banking channels have experienced phenomenal growth and have become the main avenues for banks to deliver their products and services (Amato- McCoy, 2009). Nyangosi & Arora (2009) noted that banking through electronic channels has gained much popularity in recent years with majority of the banks having rolled out one or more of these to deliver their products and services to a wide clientele. Significantly, the application of information and communication technology concepts, techniques, policies and implementation strategies to banking services has become a subject of fundamental importance and concerns to all banks and indeed a prerequisite for local and global competitiveness (Obasan, 2011). According to Munyoki & Ngigi (2011) continuous technology development, particularly information technology revolution has forced the banks to embrace internet banking channel as one of the strategies for their sustainable growth in an expanded competitive environment.

1.1 Internet banking:

Internet banking is defined as the systems that enable bank customers to get access to their accounts and general information on bank products and services through the use of bank's website, without the intervention or inconvenience of sending letters, faxes, original signatures and telephone confirmations (Thulani, Tofara & Langton, 2009)

Banks decide to invest in Internet banking for many reasons; among these are: pressures to cut costs, increase information richness for customers, pressures to produce more without increasing costs, improve the quality of services in order to stay in business or to reach a wider audience. Banking is no longer limited to geographical regions, there is improved efficiency and effectiveness of operations meaning that more transactions can be processed faster and most conveniently, which will undoubtedly impact significantly on the overall performance of the banks (Padmalatha & Justin, 2011). Olawepo (2012) further advanced that banks can benefit from much lower operating costs by offering internet banking services, which require less staff and fewer physical branches.

To the customers, internet banking allows them to perform a wide range of banking transactions electronically via the bank's website anytime and anywhere (Grabner-Kraeuter & Faullant, 2008). Nasri (2011) noted that with the help of the internet, banking is no longer bound to time or geography therefore consumers all over the world have relatively easy access to their accounts 24 hours per day, seven days a week. In addition Liao, Shao, Wang & Chen (2011) showed that internet banking has the advantage in that customers avoid traveling to and from a bank branch hence, customers can manage their banking affairs when they want, and they can enjoy more.

Customers gain convenience and flexibility of services (Liao et al., 2011). This is because these new services can easily be accessed at any time from any locations with up-to-date information, efficient and effective response time, and use of friendly interface technology (Ayo & Oni, 2010). Opening hours of banks are no longer a barrier to access banking services in addition travel and waiting times are no longer necessary, and access to information regarding banking services is now easily available (Ayo & Oni, 2010).

1.2 Commercial banking industry in Kenya:

In Kenya, commercial banks and mortgage finance institutions are licensed and regulated pursuant to the provisions of the Banking Act and the Prudential Guidelines (CBK, 2013). Through various distribution channels which include branch network, internet, mobile applications, point of sales and automated teller machines, banks ensure that money circulates within the economy in a profitable and efficient manner (Muithya, 2013). There are 43 licensed Commercial banks and 1 Mortgage finance company (CBK, 2013), with an ownership structure of 30 locally owned and 14 foreign owned banks. In addition, the locally owned financial institutions encompass 3 banks with significant shareholding by the Government and State corporations, while 28 are privately owned (27 commercial banks and 1 mortgage finance institution)(CBK, 2013).

2. STATEMENT OF THE PROBLEM

Several studies have brought out a number of observations by researchers on what could have occasioned the low uptake and continued use of internet banking; while Nyagosi et al. (2009) thought it's because of other alternative banking channels, others like Ozuru et al. (2010); Gikandi & Bloor (2010) and Isaiah (2011) observed that customers have attitudes and perception that dissuade them from using internet banking.

In focusing on the commercial banks in Kenya, the current research will extrapolate further by using a more representative sample that captures the banking industry in Kenya. It will aim at investigating the perceptions customers have on internet banking by studying thier perception on cost of internet banking.

3. OBJECTIVES OF THE STUDY

The main objective of the study was to investigate the effect of customers' perceptions on the usage of internet banking in commercial banks in Kenya. The specific objectives were:-

- To determine the effect of internet banking cost on its usage in commercial banks in Kenya.

4. LITERATURE REVIEW

Relevant literature to this research was reviewed from books, journals and websites

4.1 Theoretical review:

Technology Acceptance Model (TAM) has expansively been used by various studies to test how technology is being accepted by consumers over the years. TAM which was developed originally by Davis in 1989 is used to explain how a customer accepts or decline the use of a technology based upon perceived ease of use and perceived usefulness of a technology (Aldás-Manzano, Lassala-Navarré, Ruiz-Mafé & Sanz-Blas, 2009).

The use of technology acceptance model elements in the current study will help in hypothesizing customers' perceptions on internet banking usage. If customers perceive internet banking as easy to use because it is secure, privacy is guaranteed, cost effective, less complex and that they have prior knowledge of technology, they will most likely perceive it as useful. Consumer demographics (such as age, gender, marital status, occupation and level of education) will help in grouping customers for purpose of understanding perceptions for each group based on certain shared attributes. External variables represent the intervening variables specifically other alternative banking channels which act as deterrents to use of internet banking. These myriad of elements will in turn affect customers' attitude, intention and actual use of internet banking.

4.2 Empirical review and research gap:

Aliyu & Tasmin (2012) stated that for consumers to use new technologies, the technologies must be reasonably priced relative to alternatives; otherwise, the acceptance of the new technology may not be viable from the standpoint of the customer.

A study by Uddin & Akhter (2012) on determinants of customer satisfaction in banking industry in Bangladesh concluded that service quality and fair service charge both had positive direct impact on customer satisfaction in the banking industry and thus spur uptake and continued use of internet banking. It was further observed that they also had indirect influence on customer satisfaction through perceived value, i.e. perceived value had a mediating role between quality, charge fairness and satisfaction. The study looked at service charge in terms of transaction fee applied in the banking industry in Bangladesh. Other constructs of charges such as maintenance fees, internet connection fees and cost of equipment used to access internet banking were not studied.

Alhaji, Aliyu, Tasmin & Sulaman. (2013) carried a study on the impact of internet banking on customer service delivery in Malaysian banking industry. The research showed that customers do value and were satisfied with internet banking on account of low or affordable charges, the service were convenient or user friendly and their financial transaction were secured. The research also showed that, cost of internet banking had a more significant impact than convenience and security of internet banking toward effective customer service delivery.This study mainly concentrated on cost of transactions which were considered low in reference to over the counter charges. However the study cannot purport that transaction charge is the only cost that can deter one from using internet banking services. Other associated costs like internet connection charges (air time, data bundles or Cyber café), monthly maintenance fees and cost of equipment (computers, smart phones) used to access the internet baking were not incorporated in the study.

5. METHODOLOGY

The study used descriptive research design to collect data from the respondents. Mugenda and Mugenda (2003) noted that the purpose of descriptive research is to determine and report the way things are and it helps in establishing the current status of the population under study. The target population for the study being customers in all the 43 commercial banks operating in Kenya within Nairobi County. Essentially these are customers who have transactional and current accounts that allow one to use internet banking services. Customers both users and non-user were included in the investigation. A survey by Finaccess (2013) observed that there were a total of 1,837,312 customers who operated transactional and current accounts cumulatively in all the 43 commercial banks-branches in Nairobi County: this formed the accessible population for this study. Purposive sampling technique to pick a cluster of 12 out of the 43 commercial banks for this study. A stratified random sampling technique was used to pick respondents. This was then followed by random selection

of subjects from each stratum (Orodho & Kombo, 2002). Mugenda and Mugenda (2003) recommend the use of 10% - 30% sample size of the population and thus the use of the selected number of banks met this threshold.

According to Mugenda & Mugenda (2003) a large population is one which comprises of 10,000 elements and more. In this study the study population was made up of 1,837,312 customers and hence can be defined as a large population. Using the Fishers formula below recommended by Mugenda & Mugenda (2003) the sample size for this study was determined as follows:

$$n= \frac{Z^2 p\, q}{d^2}$$

Where:

n -   The desired sample size

z -   The standard normal deviation set at 1.96 which corresponds to 95% confidence interval

p-   Proportion of target population estimated to have characteristics being measured. For this study this is set at 50% (0.5)

q-   1-p (those without characteristic of interest)

d-   Precision level desired or the significance level which is 0.05 for this study

$$n= \frac{(1.96)^2 \text{ x } (0.5)\,(0.5)}{(0.05)^2} = \textbf{384}$$

Table 1: Distribution of target population

No.	Banks	Market size index (%)	Transaction & Current account holders in each bank	% No. of Transaction & Current account holders in each Bank	Sample size per bank
1	Kenya Commercial Bank Ltd	12.83%	2357	21.9	84
2	Equity Bank Ltd	9.79%	1799	16.7	64
3	Co-operative bank of Kenya Ltd	8.61%	1582	14.7	57
4	Standard Chartered Bank (K) Ltd	8.09%	1486	13.8	53
5	Commercial Bank of Africa Ltd	4.40%	808	7.5	29
6	Diamond Trust Bank (K) Ltd	4.26%	783	7.3	28
7	I&M Bank Ltd	4.19%	770	7.1	27
8	NIC Bank Ltd	4.17%	766	7.1	27
9	African Banking Corporation Ltd	0.70%	129	1.2	5
10	Gulf African Bank Ltd	0.62%	114	1.1	4
11	Equatorial Commercial Bank Ltd	0.53%	97	0.9	3
12	Giro Commercial Bank Ltd	0.52%	96	0.9	3
			10,787	**100**	**384**

Source: FinAccess (2013)

Data Analysis:

The results were presented using frequency tables while inferential statistics were used to derive meaningful findings and conclusions.

A multi linear regression model was used to test the effect of independent variables on dependent variables. The model is show below

$Y = \beta_o + \beta_1 X_1 + €$

β_o $=$ constant

βi; {i=1} = The coefficient representing the independent variable

Xi; {i=1} = Values of the independent (covariates) variable

$€$ = error term which is assumed to be normally distributed with mean zero and constant variance.

Y $=$ usage of internet banking in commercial banks

X_1 $=$ cost of internet banking

6. PRESENTATION AND ANALYSIS OF FINDINGS

6.1 Response rate:

Out of the 384 self-administered questionnaires 310 were returned. However, only 272 were duly completed. This converts to a response rate of 71% as shown in the summary Table below

Table 2: Response rate

Response	Frequency	Percentage
Returned	272	71%
Unreturned	112	29%
Total	**384**	**100%**

Source: Research data (2014)

6.2 Demographic variables:

The majority of the respondents were male (56.2%). This indicated a male's dominance in using banking services. This agrees with results reported by Flavian et al (2006) that women were less likely to conduct their banking activities online. Most of the respondents are young between 18- 30yrs and as such more in tune with banking technology. This view is consistent with Alagheband (2006) who asserted that young individuals are more likely to adopt internet banking.

The result on marital status showed that the customer's attitude towards internet banking adoption is higher for singles (49.6%). A result that shows single people are more likely to adopt and use internet banking services than couples. It may simply indicate a high likelihood for singles to use internet banking compared to married people.

The findings imply that education increases the likelihood of adopting internet banking services. Majority of the respondents hold either a bachelors degree (30.1%) or other professional courses (26.1%). Thus highly educated consumers may be more likely to adopt internet banking services than low educated consumers. This is consistent with Karjaluoto et al (2002) who concluded that people with high educational attainment may have an aptitude for computers and possesses good information processing skills. In addition Young (2006) showed that highly educated groups generally accept changes more readily.

People who have a reliable source of income tend to have a high propensity to banking services. This is indicated in the study finding showing that majority of the respondents have some form of employment (salaried – 59.6% and self-employed – 30%). Analysis of the data showed that majority of the respondents at 58.1% operated a transactional account. 64.3% of respondents had registered for internet banking with majority having an account in only one bank. Frequency of using internet banking is mostly on monthly basis and majority of the respondents have had access to internet banking for more than three years.

Table 3: Summary of demographic variables

Variable			Frequency	%
Gender		Male	153	56.2
		Female	119	43.8
		Total	**272**	**100**

Variable		Frequency	%
Age	18-24	37	13.6
	25-30	101	37.1
	31-35	61	22.4
	41-45	45	16.5
	46-50	16	6.0
	Missing	12	4.4
	Total	**272**	**100**
Marital	Single	135	49.6
	Married	112	41.2
	Divorced/Separated	4	1.5
	Missing	21	7.7
	Total	**272**	**100**
Education	No Formal	13	4.8
	Primary	28	10.3
	Secondary	43	15.8
	Bachelor	82	30.1
	Post Graduate	35	12.9
	Other Professional course	71	26.1
	Total	**272**	**100**
Occupation	Unemployed	26	9.6
	Salaried	162	59.6
	Self Employed	84	30.0
	Total	**272**	**100**
Type of account held	Transactional Account	158	58.1
	Current Account	66	24.3
	Both	48	17.6
	Total	**272**	**100**
Signed for internet banking	Yes	175	64.3
	No	97	35.7
	Total	**272**	**100**
Number of banks where users have internet banking account	One	137	50.4
	Two	38	14.0
	None	97	35.7
	Total	**272**	**100**
Frequency of using internet banking	Daily	25	9.2
	Weekly	45	16.5
	Monthly	67	24.6
	Other	38	14.0
	Missing	97	35.7
	Total	**272**	**100**
Duration of access to internet banking	Less than 1 Year	17	6.3
	1-2 Years	21	7.7
	2-3 Years	38	14.0
	3-5 Years	46	16.9
	More than 5 years	53	19.5
	Total	**272**	**100**

Source: Research data (2014)

6.3 Transaction services carried on internet banking:

Respondents were asked about the services they carry out on internet banking. From the responses obtained all those who had used internet banking indicated that they use the service to check their account balance (100%) and account statement enquiry (100%). 25.7% of the respondents indicated that they use internet banking to transfer funds compared to 74.3% who said they don't .Other internet banking services are rarely used for instance ordering cheque books (21.1%), stopping cheque payments (23.4%), Email Enquiry (41.1%), knowing bank products (8.6%), bills payment (38.9%), prepaid

mobile top-up (30.3%) and management of direct debits and standing orders at 32.6% and changing internet banking password (29.7%). This is shown in table 4. The results indicate an underutilization of the internet banking channel.

The use of internet banking as a channel for accessing banking services is only average (Muranguri, 2013). Podder (2005) was of a similar opinion when he found out that the number of transactions carried out through the internet banking channel remained low in developing and undeveloped countries. According to Podder there is still room for banks to encourage uptake of the service by customers.

Table 4: Transaction services carried out on internet banking

Internet Banking Service	N	Service usage	%	Service not used	%
Check account balance	**175**	175	100.0	0	0.0
Account statement enquiry	**175**	175	100.0	0	0.0
Transfer of funds	**175**	45	25.7	130	74.3
Order cheque book	**175**	37	21.1	138	78.9
Stop cheque payment	**175**	41	23.4	134	76.6
E-mail enquiry	**175**	72	41.1	103	58.9
Change password	**175**	52	29.7	123	70.3
Know bank products	**175**	15	8.6	160	91.4
Bills Payment	**175**	68	38.9	107	61.1
Prepaid mobile top-up	**175**	53	30.3	122	69.7
Manage direct debits and Standing orders	**175**	57	32.6	118	67.4

Source: Research data (2014)

6.4 Frequencies and descriptive analysis on customer perception variables:

This section is analyzed based of the objectives of the study

6.4.1 Cost of internet banking:

The results showed that majority of the respondents at 80.9% feel internet fees (such as cyber café charges, telecommunication charges and data bundles) are high. Only a few at 16.5% think otherwise. 84.9% of the respondents agree that internet banking transaction charges are high while 6.9% were of a contrary opinion and disagreed to the claim. From the results 94.9% of the respondents were concerned about paying monthly internet banking maintenance fee; only 5.1% disagreed. 85.7% of the respondents agreed that cost of computers and smart phones used to access internet banking is high while 11.1% disagreed. The average mean score of the responses in this section was 2.72 indicating that cost had an effect on usage of internet banking in commercial banks in Kenya.

The findings concur with those of Sathye (1999) whose study revealed that if consumers are to use new technologies; the technologies must be reasonably priced relative to alternatives. Otherwise, the acceptance of the new technology may not be viable from the standpoint of the consumer. Virtual society project researcher (Buzz, 2000) pointed out that millions of users are now turning their backs on the internet due to its limitations and high access charges. Moreover, Sathye (1999) also noted that another major factor for adopting internet banking was the availability of access to computers/internet. Connell (2007) stated that lack of access to computers as one of the reason for slow adoption of Internet banking.

7. INFERENTIAL STATISTICS

7.1.1 Bivariate correlation:

Table 11: Bivariate correlation

Variable		Usage of internet banking	Cost
Usage of internet banking	Pearson Correlation	1.000	
	Sig. (2 tailed)		
Cost	Pearson Correlation	0.390	1.000

Source: Research data (2014)

Table 11 displays the results of correlation test analysis between the dependent variable (usage of internet banking) and the independent . The results show that usage of internet banking is positively correlated with the independent variable used in the study. This reveals that any positive change in cost of internet banking will have an effect on internet banking usage.

7.1.2 Regression analysis:

In order to establish the statistical significance of independent variables on the dependent variable, regression analysis was employed. The regression model took the following form:

$Y = \beta_o + \beta_1 X_1 + \epsilon$

β_o $=$ constant

βi; {i=1} = The coefficient representing the independent variable

Xi; {i=1} = Values of the independent (covariates) variable

ϵ = error term which is assumed to be normally distributed with mean zero and constant variance.

Y $=$ usage of internet banking in commercial banks

X_1 $=$ cost of internet banking

The findings in table 12 show that the coefficient of determination also called the R square is 79.3%. Coefficient of determination explains the extent to which changes in the dependent variable can be explained by the changes in the dependent variable. This means that the combined effect of the predictor variables(cost of internet banking) explains 79.3% of the variation in effect of customer perception on the usage of internet banking in commercial banks in Kenya. The correlation coefficient of 89.0% indicates that the combined effect of the predictor variables has a strong and positive correlation with the dependent variable

Table: 12: **Regression model fitness**

R	R Square	Adjusted R Square	Std. Error of the Estimate
.890	.793	.782	.224

Source: Research data (2014)

Analysis of variance (ANOVA) was further carried out to test the significance of the regression model in relation to the difference in means of the dependent and independent variables. The results on table 13 shows that cost of internet banking was statistically significant in explaining the effects of customer's perception on usage of internet banking in commercial banks in Kenya. The findings produced an f-value of 75.942 which was significant at p<0.001. This illustrates that the regression model is significant at 95% confidence level. Thus, confirming that there is a relationship between customer perception and usage of internet banking. The value of F is large enough to conclude that the independent variable as a whole was contributing to the variance in usage of internet banking.

Table 13: ANOVA

Indicator	Sum of Squares	Df	Mean Square	F	Sig.
Regression	49.478	13	3.806	0.7594	.000
Residual	12.930	258	.050		
Total	62.408	271			

Source: Research data (2014)

Table 14 evaluates and interprets the standardized coefficients of correlation (beta). In estimating the contribution of each independent variable in the study, it was established that all independent variables significantly contributed to the variance of usage of internet banking in commercial banks in Kenya at 0.05. However, the relative importance of each independent variable was different.

Table 14: Regression Coefficients

Variable	Unstandardized Coefficients		Standardized Coefficients
	B	Std. Error	Beta
(Constant)	1.671	0.318	
Cost of internet banking	0.077	0.100	0.161

Source: Research data (2014)

Since the significant values are less that 0.05, the coefficients are significant and therefore the regression equation becomes:

Usage of internet banking in

Commercial banks in Kenya = $1.671 + 0.161X_2 + €$

8. CONCLUSION

Based on the findings of the study it was concluded that customer perceptions have an effect on usage of internet banking in commercial banks in Kenya. Customer felt that internet access fees and internet banking transaction charges are high. Costly internet access and unreasonable pricing of internet banking transactions, hinders usage of the internet and by extension technological solutions offered by commercial banks such as internet banking. Availability of access to computers or smart phones and internet is a prerequisite for adoption of internet banking. Lack of these or insufficient resources will also contribute to decline in usage or less number of users of internet banking.

9. RECOMMENDATIONS OF THE STUDY

Commercial banks can relook into the issue of subsidizing the monthly internet banking maintenance fee. Even though they want to recoup from their investment of the system, they can charge a minimal fee or no fee at all but then encourage more usage for the service; that way the banks get more users of the service while they gain from commissions collected from usage.

10. SUGGESTIONS FOR FURTHER RESEARCH

The researcher focused on individual customers of commercial banks. Further studies can be done focusing on effect of corporate customer's perception on usage of internet banking in commercial banks in Kenya and also on strategies employed by commercial banks to encourage adoption and continued use of internet banking by customers.

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