
**SERVICE QUALITY AND CUSTOMER LOYALTY IN MOBILE
TELECOMMUNICATION NETWORKS IN MBARARA MUNICIPALITY**

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ABSTRACT: *The study aimed at service quality and customer loyalty in mobile telecommunication networks in Mbarara municipality and it was guided by the following objectives; To establish the relationship between service quality and customer loyalty, to establish the relationship between service quality and customer satisfaction and to establish the relationship between customer satisfaction and customer loyalty. The population constituted adults aged 18 years and above despite the fact that there were children below 18 years owning mobile phones. The findings confirm a positive and significant relationship between Service quality and customer loyalty ($\beta = .669$; $p < .05$). A normal probability plot (normal Q-Q plot) was used in this study to plot the residual against the predicted scores. The correlation coefficient was found to be less than 0.90 implying limited threat of multicollinearity in the data. The telecommunication companies should promote service quality with in management and other shareholders as this is crucial in achieving customer loyalty. This can be achieved through being reliable and responsive to customer needs.*

Key words: **SERVICE QUALITY AND CUSTOMER LOYALTY**

Background

Bhaargay (2016) in his study pointed out that loyalty programs are one of the most effective ways to retain customers and drive down the acquisition costs. Some speculate that the concept of loyalty might have begun in the 1700's when redeemable copper tokens were given away for purchases. However, without the innovative efforts of a few companies, loyalty programs would not have shaped up into what we know them to be today. This chronological list not only takes us back in time but additionally presents the intriguing question of what's next in loyalty.

American Airlines Computing technology in business enterprises became mainstream in the 1980's. With capable systems in place, companies were able to maintain databases that contained large amounts of information. In 1981, American Airlines launched their Frequent Flier Program (FFP) with the help of such computerized databases. This was an instant game changer as it began rewarding fliers with miles that could be redeemed during another travel.

From the Ugandan perspective, service quality has been found to affect customer satisfaction and loyalty, companies use loyalty programs (like giving free air time, free SMS and free internet services) that provide economic rewards to enhance customer relationships. However, the argument is that a dissatisfied but complacent or contented customer is unhappy and may be disloyal (Tronvoll, 2012).

According to (Mabel, 2014) in the past decade, mobile telephone companies have changed not only at the corporate and business levels but also in terms of consumer engagement. Companies have introduced the use of electronic commerce activities like making telephone calls, using internet services and short message services (SMS), and sending/receiving money using mobile telephones. While such changes have facilitated innovative business strategies, they have also created many challenges to the user experience. Mobile telephone companies in Uganda are faced with the problem of increasing competition leading to fear of losing customers to competitors.

Statement of the Problem

Despite these telecom firms offering nearly the same product services like call rates, internet subscription and financial services, there is still low customer loyalty evidenced by customers ever switching from network to network, hence leading to drop in number of customers as a result of failure to maintain the old customers (Cartesian, 2015). If this situation is not checked, there is a likelihood that these firms are going to lose their customers (BMI, 2017)

UCC carried out a Quality of Service (QoS) performance exercise on the five (5) operational Global System for Mobile communications (GSM) networks from February-June 2014 in Jinja, Kabale, Kampala, Kasese, Masaka, Mbale, Mbarara and Mukono. The networks were evaluated against UCC Key Performance Indicators which are: less than 2% for dropped call rate (DCR), less than 2% for blocked call rate (BCR) and greater than or equal to 98% for successful call rate (SCR). In this study, it was found out that all the five (5) operators failed the blocked call rate and the successful call rate tests safe for dropped call rate, (UCC, Quality of Service Report, 2014). This could be as a result of the state of quality services that have affected their customer loyalty. This study therefore was set to establish the relationship that exists between selected service quality parameters (reliability, responsiveness, and empathy), customer satisfaction and customer loyalty.

Specific Objectives

1. To establish the relationship between service quality and customer loyalty
2. To establish the relationship between service quality and customer satisfaction
3. To establish the relationship between customer satisfaction and customer loyalty

Research Questions

1. What is the relationship between service quality and customer loyalty?
2. What is the relationship between service quality and customer satisfaction?
3. What is the relationship between customer satisfaction and customer loyalty?

Methodology

Research design

Cross-sectional and correlational research designs were used. Cross-sectional design was used to gather data from a sample of population at a particular point in time while correlational design was used to assess the degree of relationship that existed between the study variables (Sekaran, 2003). Data was collected at a particular time and analyzed within the same period basing on the objectives of the study. The lower costs of acquiring new SIM card or owning multiple SIM cards makes it easy for mobile phone subscribers to switch from one network to another hence making their profiles very dynamic hence the justification for the chosen research design

Study population

The study population constituted individuals with mobile telephones leaving in Mbarara Municipality and subscribers to the main telecommunication networks available in Western Uganda (MTN, Airtel, UTL, and Africell). The population constituted adults aged 18 years and above despite the fact that there were children below 18 years owning mobile phones.

Sample size

In a situation where it's hard to get the total population for the study, (Roscoe, 1975) provides the following rule of thumb for determining the sample size, "sizes larger than 30 and less than 500 are appropriate for most of researches". Therefore, the researcher took a sample size of 300 respondents to be a representative sample size for the study.

Table 1: Subscribers and Sample Size

No	Subscribers	Sample size
1	MTN	100
2	UTL	30
3	Africell	70
4	Airtel	100
	Total	300

The respondents were sampled according to the categories specified in table 3.1 to get a fair representative of the study. Some telecom companies are known to have more subscribers than the others as evidenced by the ever long queues at their service centers and congestion in the customer helpline hence the reason for the variation in the sample size per player.

Sampling techniques and procedures

Purposive sampling was used where the researcher went to the service center of each telecom company upon permission with management and collected data using the questionnaire from the visiting customers with the help of the research assistant. Snow ball or networking was used where by one respondent led to another of the same network. A customer on a certain network connected the researcher to a friend using the same network. All these techniques were employed until the required sample size was obtained.

Data Collection Methods/instruments

Primary data was obtained and the instrument of data collection was the questionnaire.

Questionnaire Survey

This method involved the researcher preparing a set of questions pertaining to the field of enquiry. The choice of a questionnaire was justified by the fact that it was the single best tool in collecting quantitative data from a big number of respondents (Amin, 2005). Questionnaire provides information based on facts and opinions. This is self-constructed with structured set of questions, and closed ended in nature. Structured questionnaire was used because large samples could be made use of and thus the results could be made more dependable and reliable, offering the greatest assurance of agreement, cheaper than other methods and free from bias. The questionnaire included the aims and objectives of collecting the information.

Data collection procedure

Recruitment and training of two research assistances on the subject matter and understanding of the questions in the questionnaire was conducted, and thereafter sent to the field to collect the required primary data in Mbarara Municipality. The questionnaires were administered by the research assistants; however, no limitations were imposed on the respondents who could respond on their own given the ability to read and write.

Data analysis

Descriptive statistics (using mean and standard deviation) was employed to analyze data from the questionnaire and results were tested with non-parametric tests of significance.

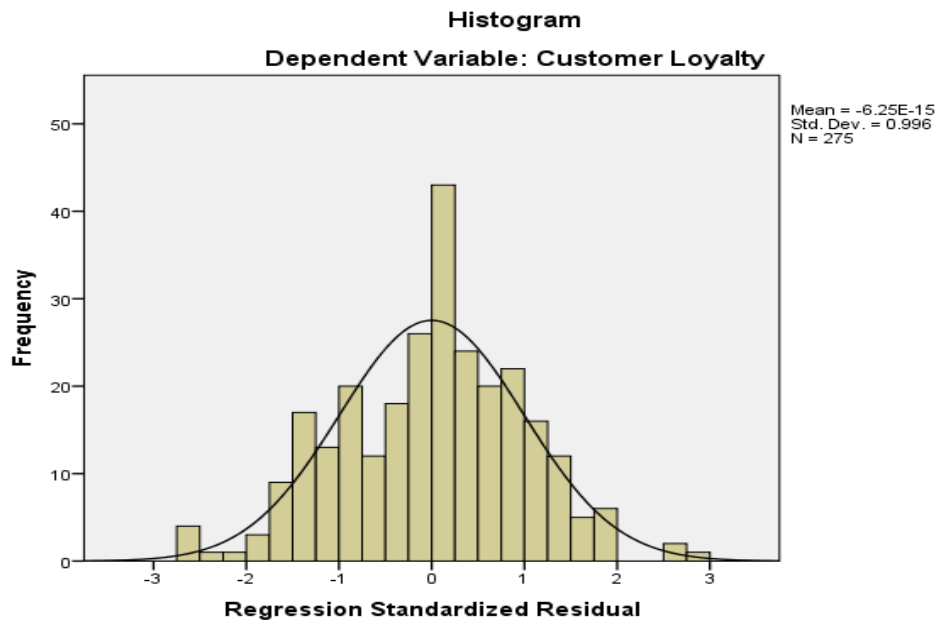
In performing trend analysis using Pearson correlation and multiple regression analysis, a set of hypotheses were developed for the independent variables (service quality dimensions) and dependent variable (customer satisfaction and loyalty).

Normality test

Normality can be assessed to some extent by obtaining skewness (symmetrical) and kurtosis (peaked Ness) values of each measured variable. According to Field (2009), skewness and kurtosis indicate the deviation from normality whereas Tabachnick and Fidell (2001) suggest using a

histogram to evaluate the shape of data distribution. Therefore, the bell-shaped histogram (figure 2) confirms that data are normal distributed in the current study.

Figure 2: Normal distribution

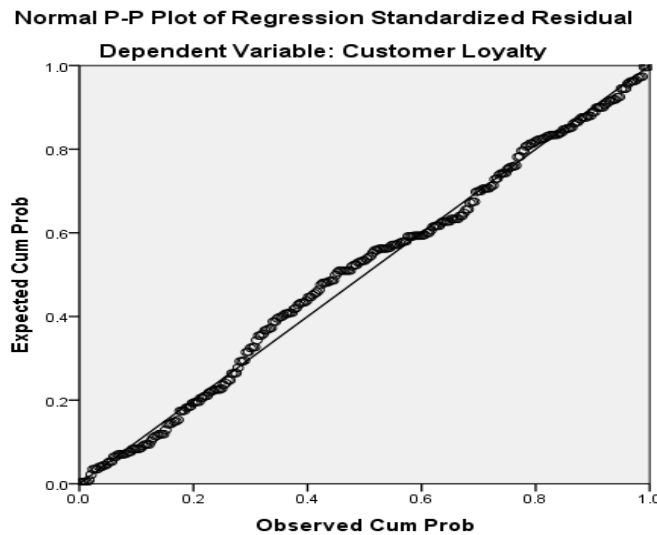


Source: Primary data

Linearity test

Linearity refers to the presence of a straight-line relationship between two variables. As the regression analysis is only suitable for testing linear relationship between the independent variables and dependent variables, this assumption must be met before performing this analysis. Linear data is obtained when the scores are seen to be in the form of fairly straight line, not a curve. A normal probability plot (normal Q-Q plot) was used in this study to plot the residual against the predicted scores. Field (2000) noted that if the assumption of linearity between the independent variable and dependent variable is met, the plot of the residual against predicted scores will also be linear. Therefore, the normal plot results revealed a fairly straight line showing that the data was linear.

Figure 3

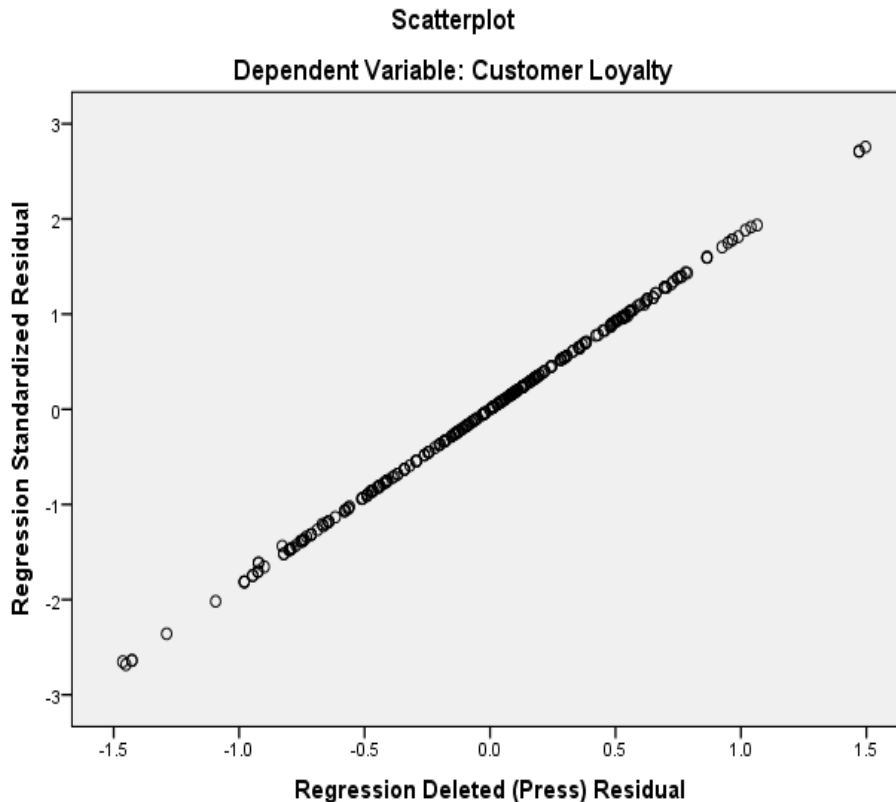


Source: Primary data

Homogeneity test

Homogeneity test was conducted to assess the suitability of data for parametric tests. This assumption means that the variance of one variable should be stable at all levels of the other variable (Field, 2009). Graphically, a scatter plot was drawn plotting the residual against the dependent variable. The results of the scatter plot (figure 3) shows that the points are dispersed around zero and there is no other clear trend in the distribution. This is an indication that homogeneity and linearity assumption were met. If the graph funnels out or if there is a curve in the graph, it indicates the probability of heteroscedasticity in the data which can violate the condition of multivariate analysis (Field, 2006), hence it is not the case for this study. Given the fact that the tests for parametric assumption were met, parametric tests were found suitable for the study.

Figure 4



Source: Primary data

Multicollinearity

Multicollinearity exists if there is high correlation between independent variable when regressed against each other. According to Tabachnick and Field (2001) these correlations must not perfectly exceed .70. In the same way, Cooper and Schindler (2003) indicated that correlation of .8 or higher are problematic while Field (2006) described very high correlation to be correlation above .90. The correlation coefficient was found to be less than 0.90 implying limited threat of multicollinearity in the data. The collinearity diagnostic in regression were further used to check for the threat of multicollinearity. Therefore, two values were analyzed under this test:

RESULTS

Demographic Characteristics of the respondents.

Respondents were asked to provide information regarding the Mobile Telecommunication Networks in Mbarara Municipality

Distribution by sex

The sex of respondents was distributed as indicated in table 4.1

Table 2: Sex of respondent

Variable	Frequency	Percent
Male	158	57.5
Female	117	42.5
Total	275	100.0

The results in table 2 indicate that majority of the respondents were men (57.5%) and woman were 42.5%.

Distribution by Age

The Age of the respondents was distributed as indicated in table 3

Table 3: Age of the respondents

Variable	Frequency	Percent
18-25	135	49.1
26-35	106	38.5
36-45	27	9.8
46 & above	7	2.5
Total	275	100.0

The results in table 3 show that the majority of the respondents 49.1% were between 18-25 years, followed by those between 26-35 years (38.5%) the least age bracket was those above 46 years (2.5%)

Distribution by Employment status

The employee status was distributed as indicated in table 4

Table 4: Employment status

Variable	Frequency	Percent
Salary employment	61	22.2
Business	136	49.5
Unemployed	29	10.5
Retired	1	.4
Student	40	14.5
Others (mention)	8	2.9
Total	275	100.0

The results in table 4 indicate that majority of the respondents were Business people (49.5%) followed by salary earners (22.2%) and the least was the retired (0.4%)

Distribution by source of income.

The respondents' source of income was distributed as indicated in table 5

Table 5: Main source of income

Variable	Frequency	Percent
Business	126	45.8
Salary	99	36.0
Farming	50	18.2
Total	275	100.0

The results in table 5 indicate that majority of the respondents had their income coming from Business (45.8%), these were followed by the salary earners (36%) the least group were those from farming (18.2%)

Distribution by Highest level of education attained

The level of education of the respondents was distributed as indicated in table 6

Table 6: Level of education

Variable	Frequency	Percent
None	46	16.7
Primary	49	17.8
Secondary (S.1-S.4)	51	18.5
Secondary (S.5-S.6)	40	14.5
Tertiary/Institution	89	32.4
Total	275	100.0

The results in table 6 indicate that majority of the respondents had attained a tertiary/institutional level (32.4%), this was followed by those who had finished “O” level (18.5%) and the least number of respondents had finished “A” level (14.5%)

Distribution by Marital status:

The marital status of the respondents was distributed as showed in the table 7

Table 7: Marital status

Variable	Frequency	Percent
Single	101	36.7
Married	99	36.0
Cohabiting	9	3.3
Divorced	17	6.2
Separated	49	17.8
Total	275	100.0

The results in table 7 indicate that majority of the respondents were single (36.7%) followed by the married (36%) and the least group were those who were cohabiting (3.3%)

Distribution by Name of mobile SIM card

The respondents were asked to name the type of SIM card they use and the results are indicated in table 8

Table 8: Name of the SIM card

Variable	Frequency	Percent
MTN	118	42.9
Airtel	99	36.0
UTL	18	6.5
Africell	40	14.5
Total	275	100.0

The results in table 8 indicate that majority of the respondents were using MTN (42.9%) followed by those who use Airtel and the least group were using UTL (6.5%)

Distribution by what prompted you to buy this SIM card

The respondents were asked on what prompted them to buy the SIM card and the results are indicated in table 9

Table 9: What prompted you to buy this SIM card?

Variable	Frequency	Percent
Has many people	128	46.5
Good customer care	93	33.8
Cheapest	28	10.2
Good net work	26	10.1
Total	275	100.0

The results in table 9 indicate that majority of the respondents bought there SIM cards because majority of the people is what they use (46.5%) while others said that their networks were giving good customer care.

Distribution by Years spent with the network

The respondents were asked the years they had taken with their networks and the results are indicated in table 10.

Table 10: Years spent with the network.

Variable	Frequency	Percent
1-4	128	46.5
5-9	86	31.3
10 and above	61	22.2
Total	275	100.0

The results in table indicate that majority of the respondents had spent 1-4 years (46.5%) with the network, followed by those who had spent 5-9 years (31.3%) and the number of respondents who had spent 10 years and above (22.2%)

Distribution by the number of SIM cards

The number of SIM cards owned by each respondent were indicated in table 4.10

Table 11: Number of SIM cards owned.

Variable	Frequency	Percent
Yes	137	49.8
No	138	50.2
Total	275	100.0

The results in table 11 indicate that majority of the respondents had one SIM card (50.2%) while 49.8% had more than one SIM cards.

Distribution by the most favorite SIM card.

If **NO**, is it still your most favorite SIM card?

Table 12: Distribution by the favorite SIM card

Variable	Frequency	Percent
Yes	177	64.4
No	98	35.6
Total	275	100.0

The results in table 12 indicate that majority of the respondents took their one SIM card as their favorite (64.4%) while 35.6% those cards were not their favorites.

Distribution by reasons for your most favorite SIM cards

Give reasons for your answer in **B5** above

Table 13: Reasons for your answer in B5 above

Variable	Frequency	Percent
Has many people	148	53.8
good network coverage	127	46.2
Total	275	100.0

Majority of the respondents had their reasons covering to; their friends and family members were using the same networks while others took their networks as networks of good network coverage.

Distribution by reasons that would compel one to quit the SIM card

If you were to quit this line, what would possibly compel you to do so? (Give the reasons)

Table 14: Reasons that would compel one to quit the SIM card

Variable	Frequency	Percent
High charges	184	66.9
Poor network	89	32.4
Other Factors	2	.7
Total	275	100.0

The respondents were asked if they were to quit, what could be the reason, and most of them were giving reason of high charges in form of high call rates and poor network.

Pearson Correlation

Table 15: The Correlation Table

Variables	1	2	3	4	5	6
Reliability (1)	1					
Empathy (2)	.590**	1				
Responsiveness (3)	.599**	.640**	1			
Service Quality (4)	.844**	.873**	.863**	1		
Customer Satisfaction (5)	.656**	.694**	.648**	.775**	1	
Customer Loyalty (6)	.604**	.580**	.544**	.670**	.670**	1

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

Relationship between service quality and customer loyalty

Objective (1) was to establish the relationship between service quality and customer loyalty

The results in table 15, shows that there is a positive significant relationship between service quality and customer loyalty ($r=.670$, $p<.01$). This means that any positive change in service quality is associated with a positive change in customer loyalty. In addition, all the dimensions of service quality have a positive significant relationship with customer loyalty.

The relationship between service quality and customer satisfaction

Objective (2) was to establish the relationship between service quality and customer satisfaction

The results in table 15, shows that there is a positive significant relationship between service quality and customer satisfaction ($r=.775$, $p<.01$). This means that any positive change in service

quality is associated with a positive change in customer satisfaction. In addition all the dimensions of service quality have a positive significant relationship with customer satisfaction.

Objective (3) was to establish the relationship between customer satisfaction and customer loyalty

Objective (3) was to establish the relationship between customer satisfaction and customer loyalty

The results in table 15, shows that there is a positive significant relationship between customer satisfaction and customer loyalty ($r=.670$, $p<.01$). This means that any positive change in customer satisfaction is associated with a positive change in customer loyalty.

Hierarchical Regression Analysis

A hierarchical regression analysis was conducted to establish the contribution of each independent variable in explaining customer loyalty in Mobile Telecommunication Networks in Mbarara Municipality. The results are presented in table 16.

Table 16: Hierarchical Regression Analysis

Variable s	Model 1			Model 2			Model 3		
	B	SE	β	B	SE	β	B	SE	β
Constant	3.769	.161		1.058	.215		.848	.207	
Sex	.234	.093	.152	.168	.069	.109	.198	.066	.129
Age	-.087	.061	-.087	-.121	.045	-.121	-.087	.043	-.086
Service Quality				.764	.051	.669***	.425	.077	.372***
Customer Satisfaction							.373	.067	.378***

R	.163	.686	.726
R2	.027	.471	.526
AdjR2	.019	.405	.519
R2-Change	.030	.445	.055
F- Change	3.703	227.9	31.489
Sig	.026	.000	.000

***. Correlation is significant at the .000 level (2-tailed).

B. Unstandardized
coefficient

β. Standardized coefficient

a. Dependent Variable:
Customer Loyalty

Results of Model 1 in Table 16 indicate that the control variables (Sex and Age of the respondents) contribute a statistically significant explanatory power of 3% in explaining Customer loyalty

Model 2 shows that the addition of Service quality to the equation, accounts for an extra 44.5% of the variance explained by the model ($R^2 = .471$; $f\Delta = 227.9$; $p < .05$). The findings further confirm a positive and significant relationship between Service quality and customer loyalty ($\beta = .669$; $p < .05$).

The addition of customer satisfaction in Model 3, reveals an extra 5.5% of variability in customer loyalty ($R^2 = .526$; $f\Delta = 31.489$, $p < .05$). The model results also show that there is a significant relationship between customer satisfaction and customer loyalty ($\beta = .378$; $p < .05$).

Lastly, the variables entered in the regression model explain an overall of 51.9% ($AdjR^2 = .519$) of the variance in customer loyalty, implying that the remaining 48.1% is explained by factors not considered in this study. Nonetheless, considering the three predictors in this study, the results show that customer quality has a better contribution effect on customer loyalty in Mobile Telecommunication Networks in Mbarara Municipality

Conclusions

The findings confirm a positive and significant relationship between service quality, customer satisfaction and customer loyalty in mobile telecommunication networks in Mbarara district.

Nonetheless, considering the two predictors in this study, the results show that service quality has a better contribution effect on customer loyalty in mobile telecommunication networks in Mbarara district.

Regardless of these findings service quality variable can be relied up on by telecommunication to predict customer satisfaction and customer loyalty because the regression model results revealed significant predictor of customer loyalty.

Recommendations

The telecommunication companies should promote service quality with in management and other shareholders as this is crucial in achieving customer loyalty. This can be achieved through being reliable and responsive to customer needs.

The telecommunication companies and stakeholders should promote and appreciate customer satisfaction as it's vital in achieving customer loyalty. This can be achieved through increasing on the quality of services to clients.

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