Factors Influencing Customer Satisfaction with ATM Banking

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Abstract

All banks in Malawi deploy Automated teller machines (ATMs) making ATM banking the second most popular access channel to banking products/services. Therefore, to continue achieving competitive advantage through ATM banking, bank managers need to know the key features of ATM banking whose performance greatly influence customers' satisfaction. 353 ATM card users rated the performance of ATM banking in 25 service quality attributes and further rated their perceived satisfaction with ATM banking. The regression analyses of the performance of the 25 ATM banking attributes and customers' satisfaction first reveal that the 25 attributes adopted from empirical studies provide a perfect model for predicting customer satisfaction. Secondly, reliability and responsiveness are the key service quality dimensions of ATM banking and thirdly, the analyses revealed 12 key attributes that influence customers' satisfaction with ATM banking and these are: ATM fees charged, ATMs not out of order, cleanliness of ATMs and ATM stations, accuracy of ATM transactions, ease of access to ATMs, readable slips, convenient location, employee accessibility to solve ATM problems, privacy at ATM stations, employee speed in solving ATM issues, ease of application process for ATM cards and cash availability in ATMs.

Keywords: Customer Satisfaction, Atm Banking Features, And Atm Service Quality.

Introduction

Automated teller machine (ATM) banking is a popular access channel to banking products and services behind branch banking. Banks have been offering more access points to newer ATM technologies that are faster, secure and with a wider range of services that include cash depositing to achieve competitive advantage through the ATM banking. To retain bank profitability, expanding the base of satisfied customers is of essence. As such the concept of customer satisfaction and what makes customers satisfied is an area of frequent market studies. Knowing the factors that influence customers' satisfaction with ATM banking is of significance when it comes to deployment of ATM technologies.

Empirical studies have shown that customer satisfaction is an antecedent to customer loyalty (retention) and long term profitability (Bloemer and Kasper, 1994; Jones and Sasser, 1995; Macintosh and Lockshin, 1997; Taylor and Baker, 1994) making the concept of customer

satisfaction important in firm's operations and marketing. Empirical researchers (Churchill and Surprenant, 1982; Day, 1984; Fornell, 1992; Halstead, Hartman and Schmidt, 1994; Mano and Oliver, 1993; Oliver, 1997; Tse and Wilson, 1988; Westbrook, 1980; Westbrook and Oliver, 1991; etc) have come up with conceptual and operational definitions of satisfaction. The common elements in the definitions are that satisfaction is a response, emotional or cognitive, pertaining to a particular focus either expectations about a product or a consumption experience which occurs at a particular time, after the consumption, or choice or based on accumulated experience.

The homogenous nature of retail banking products and services poses challenges towards achievement of sustainable competitive advantage and profitability. Provision of efficient access to banking products and services offers an avenue to creating competitive advantage. The quality of channels for accessing banking products and services and the performance of these channels depend on the performance of their composite features necessary to deliver satisfaction. Poretla and Thanassoulis (2005) notes that customers' satisfaction depends on provision of service quality which influences superiority of service that directly affect customers' satisfaction (Swan and Combs, 1976).

When few banks offered ATM banking technology, ATMs were a strategic tool that offered competitive advantage as they helped decongestion of banking halls and cutting down of operational costs (Cabas, 2001). Banks with ATM technology were able to reduce the number of tellers required in the banking halls. ATM technology offered competitive advantage as they provided 24 hour access to cash and customers' account information, facilitated speed of transactions and saved customers time (Moutihno, 1992). Customers were therefore attracted to open bank accounts with banks which had ATM technology thereby ATM banking offered competitive advantage to banks that had ATM technology over those that did not.

Research Problem and Objective
ATM technology has nowadays proliferated. Each bank has own network of ATMs in bank branches, shopping malls, universities, hospitals, service stations and other strategic locations to offer customers easy and timely access to banking products and services. ATMs have therefore become the second most used channel for accessing banking products behind branch banking. In the prevailing circumstances, continued enjoyment of competitive advantage through ATM banking comes from not only installing ATM technology but having ATMs with features that enhance the satisfaction of users.

As the ATM technology continues to advance, managers of banks will have choices to make as regards which attributes offer customers what they expect from ATM banking in respect of huge investment required to afford ATMs. Factors that influence customers' satisfaction with ATM banking therefore become of essence as bank managers and ATM technology providers ponder over the factors influencing customers' satisfaction with ATM banking.

Much as there are several empirical studies on customers' satisfaction with ATMs, very few studies have isolated the key factors that influence customers' satisfaction with ATM banking. This study therefore analyzed ATM attributes from empirical studies to isolate the key factors that have significant effect on customers' satisfaction in using ATM banking as an alternative way to accessing banking products and services. The study is a regression analysis of the performance of ATM banking attributes (independent variables) and customers' satisfaction with ATM banking (dependent variable).

The research is relevant to customer satisfaction, ATM banking, ATM features, and ATM service quality.

Customer Satisfaction

Westbrook and Oliver (1991) define customer satisfaction as a mental state which results from customers' comparison of expectations prior to a purchase with performance after a purchase. Halstead et al (1994) states that customer satisfaction is a transaction specific effective response from customers' comparison of product performance to some pre-purchase standard. ATM banking customers have expectations of their banks' ATM banking services against which each service encounter enhances comparison of ATM banking performance to the expectations. The comparison is conducted after the immediate usage of ATM banking services or over time of ATM banking usage.

Customer satisfaction with ATM banking is therefore the feeling developed from an evaluation of the ATM banking use experience whether the ATM banking performed relatively well or poorly against expectations. Fornell (1992) defines customer satisfaction as the overall post purchase or usage evaluation. Churchill and Surprenant (1992) look at customer satisfaction as a summation of satisfaction with various attributes of a product which alludes to the fact that satisfaction with ATM banking will come from the satisfaction with the performance of its attributes. The evaluative judgment about satisfaction with ATM banking is therefore conceived to fall somewhere on a bipolar continuum where at the lower end it signifies low levels of satisfaction (expectations exceed performance perceptions) and at the higher end it signifies a higher level of satisfaction (performance perceptions exceed expectations). This evaluative judgment occurs at a particular time based on usage experience of ATM banking which occurred at a particular time or on accumulated experience of ATM banking.

The concept of customer satisfaction has in general become of particular importance because various empirical researchers have shown that it is an antecedent of customer retention (Newman, 2001) that increases market share (Fisher, 2001) the corporate image of the firm (Newman, 2001) and long term profitability (Jochen Wirtz, 2003). Banks would expect to retain and/or expand customer base of ATM banking, holding other factors constant, if the ATM banking performance meets customers' expectations or surpasses expectations.

Measuring Customer Satisfaction

There are three dominant paradigms to the measurement of customer satisfaction (Fishbein and Ajzen, 1975; Parasuraman et al, 1985 and Cronin and Taylor, 1992).

The *Importance-performance approach* (Fishbein and Ajzen, 1975) proposes that customer satisfaction with a product or service is a composite of (1) the perceived importance of a range of the product/service attributes or benefits and (2) the customers' beliefs about the degree to which the product or service has each attribute. When the perceived performance of the product or service is measured, the importance scores are weighed against the performance scores on each attribute to determine the product or service strengths or weaknesses.

The importance-performance approach enables the researcher to analyse whether the product or service has or performs in attributes considered important by the customer (user). Thereby if the product/service performs in attributes considered important by customers (users) then the product/service has more chances of satisfying customers (users) and subsequently retaining them for repeat purchases and business growth. This is a very interesting conception of customer satisfaction that has received considerable empirical support in literature according to Sheppard, Hartwick and Warshaw (1988).

The second measurement approach to customer satisfaction is the *Expectations-performance disconfirmation* by Parasuraman et al (1985). This approach is based on the proposition that

customers evaluate or measure their satisfaction with a product/service by comparing pre-consumption expectations with post-consumption perceptions (performance). This is the basis of the SERVQUAL (Service Quality) measurement model by Parasuraman, et al (1988).

The SERVQUAL model allows customers to rate the product/service on a set of general attributes presented on a Likert scale to measure their expectations of and their perceptions of the performance of product/service attributes to measure customer satisfaction. Although SERVQUAL has received criticism from various empirical researchers such as Carman (1990) and Tribe and Snaith (1999), the model has been adopted in various empirical studies (Fick and Ritchie, 1991).

Performance only by Cronin and Taylor (1992) is the third approach to measurement of customer satisfaction. This approach challenges the previous two approaches by proposing that customer satisfaction is affected by the customers' perceptions of the performance of the product/service only. This approach by Cronin and Taylor (1992) ignores the importance (Fishbein and Ajzen, 1975) and customers' expectations (Parasuraman et al, 1985) in the measurement of customer satisfaction. Cronin and Taylor's (1992) conceptualization of this measurement approach is the basis of SERVPERF (Service performance) model which is a Likert scale where customers measure their perceived performance only of the product/service general attributes to determine their satisfaction with the product/service.

The continuing debate in literature for the merits of SERVQUAL and SERVPERF and vice versa, support SERVPERF, the performance based paradigm over SERVPERF, the disconfirmation based paradigm (Cronin and Taylor, 1994; Peter et al, 1992; Brown et al, 1992; Babakus and Boller, 1992; Babakus and Mangold, 1992).

However, both measurement approaches, SERVQUAL and SERVPERF, subscribe to the conceptualization that the product/service is a bundle of attributes (features) whose performance quality determines the level of customers' satisfaction with the product/service. The customers' satisfaction comes from the overall judgment about the product/service superiority by comparing attributes' importance with performance (Fishbein and Ajzen, 1975) or comparing expectations of attributes with performance (Parasuraman, et al, 1985) or performance of attributes only (Cronin and Taylor, 1992).

Therefore this study was structured to measure the factors that influence customers' satisfaction with ATM banking using the performance only approach (Cronin and Taylor, 1992) so that the study informs on the ATM banking attributes whose performance significantly affect customers' satisfaction with ATM banking. Participants were existing customers of banks who have experienced/used ATM banking products/services from respective banks for a minimum of two years and therefore their perceptions of the performance of the ATM attributes were based on their cumulative experience of ATM banking.

Atm Banking Attributes

Marketing literature defines a product/service as bundle of features (attributes) (Stanton et al, 1991) that bears ability to satisfy implicit or explicit needs/wants of customers. Service quality is therefore a measure of how well a product/service is delivered to meet the expectations of customers (Lewis and Booms, 1983; Lewis and Mitchell, 1990 and Asubonteng et al, 1996). Literature thus asserts service quality as an antecedent to customer satisfaction (Anderson and Sullivan, 1993 and Anderson and Fornell, 1994).

Similarly, ATM banking is a product/service that has attributes/features that meet implicit and/or explicit needs of bank customers. To achieve customer satisfaction the attributes have to deliver service quality to customers' expected threshold. Therefore before customer

satisfaction is delivered through ATM banking, managers ought to understand the features/attributes of ATM banking that provide service quality because these are the factors that influence performance superiority (Poretla and Thanassoulis, 2005) to influence customer satisfaction (Swan and Combs, 1976).
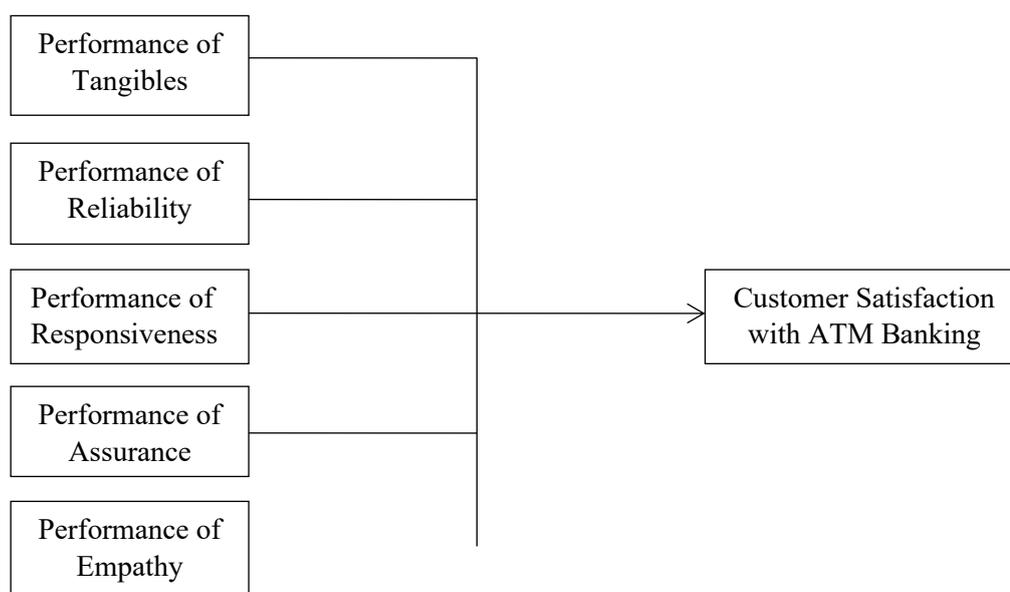
Various empirical studies (Dilijonas et al, 2009; Joseph and Stone, 2003; Lovelock, 2000; Mobarek, 2007; Patricio et al, 2003; Yavas et al, 2004; Shamsdouha et al, 2005; Islam et al, 2005; Howscroft, 1991; Moutihno and Brownlie, 1989; Al Hawari et al, 2006; Athanassopoulos, 2000; and Davies et al, 1996) identified ATM banking attributes that were adopted by this study. These attributes include number of ATMs per ATM station; issuance of clean notes; readable slips; accessibility to a wide range of banking services via ATMs, appearance of corporate branding on ATMs, cleanliness of ATMs and ATM stations; ease of application process for ATM cards; privacy when using ATMs; advice on ATM usage and ATM security; employee accessibility to solve ATM problems; convenient location of ATMs; ATM fees; security at ATM stations; bank employee friendliness when assisting on ATM issues; quick replacement of lost cards; fast return of swallowed cards; employee speed in responding to ATM problems; employee effectiveness in solving ATM problems; waiting times at ATMs; ATMs not out of order; accuracy of ATM transactions; cash availability in ATMs; speed of ATM transactions and user friendliness of ATM systems.

There were a total of 25 ATM attributes adopted from the empirical studies. These ATM banking attributes fall within the five dimensions of service quality (Parasuraman et al, 1988) that include: tangibles, reliability, responsiveness, assurance and empathy. Tangibles are the physical facilities, equipment as well as appearance of personnel; reliability is the ability to perform the promised service dependably and accurately; responsiveness is willingness to help customers and offer prompt service; assurance is knowledge and courtesy of employees and their ability to inspire trust and confidence; and empathy is caring, individualized attention the firm provides its customers (Sachdev and Verma, 2004).

The study adopted 25 attributes of ATM banking from empirical studies falling into the five dimensions of service quality for the analysis of the factors that affect customers' satisfaction with ATM banking and were operationalised through a multiple scale performance measurement instrument.

Research Model
The literature review informed the study that a product/service such as ATM banking is a bundle of features/attributes (Stanton et al, 1991) that bears the ability to satisfy implicit or explicit needs/wants of customers. These features/attributes are categorized into five dimensions; the tangibles, reliability, responsiveness, assurance and empathy (Parasuraman et al, 1988). Service quality refers to how well these product/service features/attributes deliver to meet the expectations of customers about the product/service (Lewis and Booms, 1983; Lewis and Mitchell, 1990). Therefore the performance of the features/attributes of products/services in each service quality dimension determines customers' satisfaction with the product/service as depicted in Figure 1. This therefore formed the research model in conceptualizing, categorizing and analysing the performance of factors that influence customers' satisfaction with ATM banking.

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┌─────────────────────┐
│   Performance of     │
│     Tangibles        │
└─────────────────────┘

┌─────────────────────┐
│   Performance of     │
│     Reliability      │
└─────────────────────┘
                                           ┌─────────────────────┐
┌─────────────────────┐                    │ Customer Satisfaction│
│   Performance of     │                    │   with ATM Banking   │
│   Responsiveness     │                    └─────────────────────┘
└─────────────────────┘

┌─────────────────────┐
│   Performance of     │
│      Assurance       │
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┌─────────────────────┐
│   Performance of     │
│       Empathy        │
└─────────────────────┘
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There were 25 attributes/features of ATM banking that were adopted from empirical studies (Al Hawari et al, 2006; Athanassopoulos, 2000; Davies et al, 1996; Dilijonas et al, 2009; Howcroft, 1991; Islam et al, 2005; Joseph and Stone, 2003; Lovelock, 2000; Mobarek, 2007; Moutihno and Brownlie, 1989; Patricio et al, 2003; Shamsdouha et al, 2005; Yavas et al, 2004) and were classified into the five dimensions of product/service attributes/features as follows: the tangibles aspect comprised of (1) number of ATMs per ATM station, (2) convenient location, (3) corporate brand appearance on ATMs, (4) readable ATM slips, (5) issuing of clean notes and (6) cleanliness of ATMs and ATM stations.

The reliability aspect comprised: (1) range of services at ATMs, (2) accuracy of ATM transactions, (3) speed of ATMs, (4) ATMs not out of order, (5) ATM system usability and (6) ease of access to ATMs. The responsiveness aspect comprised: (1) cash availability in ATMs, (2) quick replacement of lost ATM cards, (3) waiting times at ATMs, (4) fast return of swallowed ATM cards, (5) employee speed in dealing with ATM problems, and (6) employee effectiveness in solving ATM problems. Assurance dimension comprised: (1) privacy at ATMs, (2) ATM usage and ATM security advice, and (3) security at ATM stations and finally empathy dimension comprised: (1) employee friendliness, (2) ATM fees, (3) ease of ATM card application process, and (4) employee accessibility to solve ATM issues.

The study analyzed the performance of these ATM banking attributes within the five dimensions on how they affected customers' satisfaction with ATM banking.

Research Methodology

The research was a multiple regression analysis of the performance of ATM banking attributes (independent variables) and customers' satisfaction with ATM banking (dependent variable). 353 respondents participated in the research where each participant first rated their perceptions of the performance (Cronin and Taylor, 1992) of each attribute of ATM banking, from their respective banks, on a five point Likert scale and then rated their satisfaction with ATM banking on a five point Likert scale. The five point measurement Likert scales comprised of 1 being equal to 'very poor', 'very dissatisfied'; 2 was equal to 'poor', 'dissatisfied'; 3 was equal to 'neither poor nor good', 'neither dissatisfied nor satisfied'; 4 was equal to 'good',

'satisfied' and 5 was equal to 'very good', 'very satisfied' in each of the two measurement scales on performance and satisfaction.

The first section of the questionnaire collected demographic data on each participant that included gender, age group, education level, the frequency of ATM usage and length of usage of ATM banking from respective banks. The measurement scales had six items in the tangibles dimension, six items in the reliability dimension, six items in responsiveness dimension, three items in assurance dimension and four items in empathy dimension. The questionnaire was piloted on 30 ATM banking customers to assess its comprehensibility and structure before being administered to a conveniently drawn sample of 500 ATM banking customers. The convenient sample of ATM banking customers was opted for because banks could not make available details of ATM banking customers as this is classified bank information. The Cronbach's Alpha of 0.855 for the performance measurement scale demonstrated the scale's ability to provide reliable measurement with internal consistency (Nunnally and Bernstein, 1994). The questionnaire was administered through email where two rounds of reminders were sent to the respondents at a week's interval to improve on the response rate. 353 participants responded representing 71 per cent response rate.

Limitations
The study drew responses from participants from urban areas with a good level of education. Johnston (2005) notes the differences in education, culture, experience, exposure and tolerance levels of service quality affect participants' perceptions of satisfaction in particular contexts. Therefore the generalization and application of the results from this study on the factors influencing customers' satisfaction with ATM banking should be taken with caution.

Results And Discussion
The results are a regression analysis of the relationship between the performance of ATM banking attributes (independent variables) and customers' satisfaction with ATM banking (dependent variable). The study's objective was to investigate the factors that influence customers' satisfaction with ATM banking.

Respondents rated their perceived performance of the 25 ATM banking attributes adopted from empirical studies and then rated their satisfaction with ATM banking.

The responses were subjected to regression analysis to investigate the strength of the relationships between (1) the performance of all ATM banking attributes adopted for the study and customers' satisfaction, (2) the performance of each service quality dimension and customers' satisfaction and (3) the performance of individual ATM banking attribute and customers' satisfaction. Both bivariate and multivariate regression analyses were conducted to provide a rigorous assessment of the effect of ATM banking attributes on customers' satisfaction with ATM banking.

It is important to note that linear regression is based on three key assumptions that (1) the relationship between the dependent variable and independent variable is linear in nature, (2) the dependent variable is measured as a continuous variable with normal distribution and (3) there is homoscedasticity (same variance) in that the degree of random noise in the dependent variable remains the same regardless of the values of the independent variables.

The regression analyses were conducted as follows: (1) regression of the performance of all ATM banking attributes (independent variables) and customers' satisfaction (dependent variable), (2) regression of the performance of each service quality dimension of ATM attributes (independent variables) and customers' satisfaction (dependent variable) and (3)

regression of the performance of individual ATM banking attribute (independent variable) and customers' satisfaction (dependent variable). These analyses were conducted to assess the predictive value of ATM banking attributes on customers' satisfaction, the strength of the relationship between each ATM service quality dimension and customers' satisfaction and the linear relationship of individual ATM attribute with customers' satisfaction. In doing so the research was able to analyse the effect of each ATM banking attribute and be able to single out the key attributes that influence customers' satisfaction with ATM banking.

Table 1:
Summary model of regression analyses

	Dimension	Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
							R Square Change	F Change	df1	df2	Sig. F Change
a1	All Attributes	1	1.000a	1.000	1.000	.000	1.000	5.706E15	23	306	.000
a2	Tangibles	1	.706a	.499	.490	.763	.499	57.219	6	345	.000
a3	Reliability	1	.817a	.667	.662	.622	.667	115.409	6	345	.000
a4	Responsiveness	1	.780a	.608	.601	.670	.608	88.391	6	334	.000
a5	Assurance	1	.545a	.295	.289	.902	.295	48.447	3	348	.000
a6	Empathy	1	.751a	.564	.559	.716	.564	108.646	4	336	.000

a1: Predictors: (Constant), Fees charged, Branding Appearance, Employee Friendliness, Issuing of Clean Notes, Waiting Times, Quick Replacement of ATM cards, Security at ATMs, Cash Availability, Service Range, Easy Application Process, User Friendliness of ATM systems, Advise on Usage and security, Readable Slip, Location of ATMs, Employee Access, Fast Return of swallowed ATM cards, Cleanliness of ATMs, Accuracy of transactions, Employee Speed, Privacy at ATMs, Ease of Access to ATMs, Speed of ATMs, Employee Effectiveness.

a2: Predictors: Cleanliness of ATMs, Issuing of Clean Notes, Branding Appearance, Location of ATMs, Number of ATMs per station, Readable Slips.

a3: Predictors: Ease of Access to ATMs, Speed of ATMs, Service Range, User Friendliness of ATM systems, ATMs not out of order, Accuracy of transactions.

a4: Predictors: Employee Effectiveness, Quick Replacement of ATM cards, Fast Return of swallowed ATM cards, Waiting Times, Cash Availability in ATMs, Employee Speed.

a5: Predictors: Security at ATMs, Privacy at ATMs, Advise on Usage and security.

a6: Predictors: Employee Access, Employee Friendliness, Fees charged, Easy Application Process.

b: Dependent variable: satisfaction with ATM banking

Table 1 presents a summary of the regression analysis of the performance of all ATM banking attributes and customers' satisfaction with ATM banking and the regression analysis of the performance of each ATM service quality dimension with customers' satisfaction with ATM banking. The results first demonstrate the predictive capacity of the ATM banking attributes adopted from empirical studies. The adjusted R Square of 1.000 and Standard Error 0.000 of all attributes (a1) denotes that ATM banking attributes adopted for measuring customers' satisfaction with ATM banking in this study are a perfect model giving 100 per cent predictive capability of customers' satisfaction with statistical significance $p < 0.001$. This result validates

the ATM banking attributes adopted from empirical researches that they indeed collectively offer a model for predicting customers' satisfaction with ATM banking supporting the various studies that identified each ATM banking attribute.

However, much as all the ATM banking attributes offer the predictive capacity of customers' satisfaction with ATM banking, each attribute may not have the same influence on customers' satisfaction within the model. When the attributes were categorized into service quality dimensions of tangibles, reliability, responsiveness, assurance and empathy (Parasuraman, et al, 1988), the regression analysis of each individual dimension against customers' satisfaction demonstrate the varying influence of the service quality dimensions on customers' satisfaction with ATM banking.

The adjusted R Squares for the service quality dimensions show that reliability dimension explains 66 per cent of the variance in customer satisfaction with ATM banking holding the effect of variables in the other dimensions constant. Responsiveness comes second at 60 per cent, empathy 56 per cent, tangibles 49 per cent and assurance 29 per cent. This means that reliability of ATM banking has more influence on customers' satisfaction with ATM banking followed by responsiveness of ATM banking then empathy, tangible and lastly assurance with the least influence on customers' satisfaction with ATM banking. Reliability of ATM banking is the ability of ATM banking to perform the promised service to customers dependably and accurately whereas responsiveness of ATM banking is the willingness of ATM banking service to help customers and offer prompt service and these are the two most important service quality dimensions of ATM banking according to this study. Empathy in ATM banking relates to caring and offering individualized attention to ATM banking customers whereas tangibles refer to the physical facilities and equipment of ATM banking including the appearance of the facilities, equipment and personnel. Lastly, assurance of ATM banking is the knowledge and courtesy of ATM banking employees and their ability to inspire trust and confidence.

The results support Parasuraman et al (1988) and Zeithmal et al (1990) who found that regardless of the service studied, reliability is the most important dimension then responsiveness. The tangibles are the critical component of a service delivery but not of greater influence on customers' satisfaction as it depends on the reliability and responsiveness of the whole service delivery system.

Table 2 summarizes the linear regression of each ATM banking attribute (independent variable) and customer satisfaction (dependent variable). The adjusted R squares of 12 individual ATM banking attributes out of the 25 ATM banking attributes account for upwards of 17 per cent individually on their predictive capability of customers' satisfaction with ATM banking. A linear regression analysis holds the effects of the other independent variables constant. Therefore the linear regression of the performance of individual ATM banking attribute and customers' satisfaction with ATM banking found that ATM fees explain 51 per cent of customers' satisfaction with ATM banking. ATM not out of order explains 48 per cent of customers' satisfaction; cleanliness of ATMs and ATM locations- 47 per cent; accuracy of ATM transactions – 46 per cent; ease of access to ATMs – 36 per cent; readable slips – 31 per cent; convenient location – 29 per cent; employee accessibility – 27 per cent; privacy at ATM – 26 per cent; employee speed – 23 per cent; ease of application process for ATM cards – 21 per cent and cash availability in ATMs – 17 per cent. All these analyses are of statistical significance p<0.001.

Table 2: Linear Regression of the performance of individual ATM banking attribute and customers' satisfaction with ATM banking

Attribute	Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
						R Square Change	F Change	df1	df2	Sig. F Change
No. of ATMS	1	.177ª	.031	.028	1.054	.031	11.262	1	350	.001
Convenient location	1	.544ª	.296	.294	.898	.296	147.326	1	350	.000
Corporate branding	1	.134ª	.018	.015	1.061	.018	6.395	1	350	.000
Readable slips	1	.561ª	.314	.312	.887	.314	160.439	1	350	.000
Issuing of clean notes	1	.123ª	.015	.012	1.062	.015	5.354	1	350	.000
Cleanliness of ATMs	1	.684ª	.468	.467	.781	.468	308.437	1	350	.000
Range of services	1	.132ª	.017	.015	1.061	.017	6.221	1	350	.013
Accuracy of ATM transactions	1	.681ª	.464	.462	.784	.464	302.895	1	350	.000
Speed of ATMs	1	.136ª	.019	.016	1.061	.019	6.608	1	350	.011
ATMs not out of order	1	.695ª	.483	.482	.770	.483	327.433	1	350	.000
ATM system user- ability	1	.089ª	.008	.005	1.066	.008	2.787	1	350	.096
Ease of access to ATMs	1	.603ª	.304	.362	.854	.364	199.898	1	350	.000
Cash availability in ATMs	1	.409ª	.167	.165	.977	.167	70.301	1	350	.000
Quick replacement of ATM cards	1	.190ª	.036	.033	1.051	.036	13.097	1	350	.000
Waiting times at ATMs	1	.173ª	.030	.027	1.054	.030	10.842	1	350	.001
Fast return of swallowed cards	1	.283ª	.080	.077	1.027	.080	30.407	1	350	.000
Employee speed	1	.479ª	.229	.227	.940	.299	104.004	1	350	.000
Employee effectiveness	1	.234ª	.055	.052	1.033	.055	19.687	1	339	.000
Privacy at ATMs	1	.507ª	.257	.255	.923	.257	120.952	1	350	.000
Advice on ATM usage	1	.167ª	.028	.025	1.056	.028	9.994	1	350	.000

Security at ATMs	1	.026ᵃ	.001	.002	1.070	.001	.246	1	350	.621
Employee friendliness	1	.100ᵃ	.010	.007	1.065	.010	3.503	1	350	.062
ATM fees	1	.716ᵃ	.512	.511	.754	.512	355.658	1	339	.000
Ease of application process	1	.455ᵃ	.207	.205	.953	.207	91.569	1	350	.000
Employee accessibility	1	.522ᵃ	.273	.271	.913	.273	131.163	1	350	.000

Therefore the results of the regression analyses of the performance of ATM banking attributes and customers' satisfaction with ATM banking in this study find the following factors as the key factors influencing customers' satisfaction with ATM banking.

1. ATM fees charged
2. ATMs not out of order
3. Cleanliness of ATMs and ATM stations
4. Accuracy of ATM transactions
5. Ease of access to ATMs
6. Readable slips
7. Convenient location
8. Employee accessibility to solve ATM problems
9. Privacy at ATM stations
10. Employee speed in solving ATM issues
11. Ease of application process for ATM cards
12. Cash availability in ATMs

Although corporate branding on ATMs, issuing of clean notes, ATMs offering a range of services, speed of ATMs, ATM systems usability, quick replacement of ATM cards, waiting times at ATMs, fast return of swallowed ATM cards, employee effectiveness, advice on ATM usage, security at ATMs and employee friendliness are the other ATM banking attributes that complete the model for the prediction of customers' satisfaction with ATM banking, these attributes individually do not have enough predictive capability of customers' satisfaction. They are therefore valid ATM banking attributes but not key factors that influence customers' satisfaction with ATM banking according to this study.

The research therefore identifies the key factors that influence customers' satisfaction with ATM banking that ATM banking managers must consider to achieve customers' satisfaction. The first key ATM banking attribute according to this study are the ATM fees charged. Banks in Malawi charge different fees for using ATMs and other banks do not charge any fees. Although ATM fees are an income source to the bank, bank managers would want to divert as much customer traffic away from banking halls by increasing effective usage of ATM technology to provide faster, efficient and cheaper per unit cost of customer transactions. However, ATM fees have potential to discourage usage of ATMs among customers who perceive such fees charged per transaction as substantial over a period of frequent ATM usage. As such, banks that do not charge ATM usage fees would attract more ATM banking customers than those that do charge ATM fees thereby building competitive advantage of their ATM banking over ATM banking of those banks that do charge ATM usage fees.

Customers' satisfaction is further influenced by reliable ATMs that are not out of order, ATMs and ATM stations that are clean, in convenient locations, easy to access and have cash available at all times. Simply put, customers want effective ATM banking service that can be depended upon. Therefore banks require effective ATM management and maintenance programmes to keep ATMs in good working order, produce accurate transactions and readable slips as well as keeping the ATMs clean and well stocked with cash at all times so that customers access banking products/services freely and easily.

The ATM banking service requires to start with easy application process for ATM cards and move on to provide a responsive service where employees are accessible to solve ATM problems when needed and that employees do so with desired speed to deliver satisfying ATM banking service.

Therefore the study has isolated 12 ATM banking attributes as the key factors that influence customers' satisfaction with ATM banking.

Conclusion

Much as all the 25 ATM banking attributes that were adopted for this study are proved to provide a perfect model for predicting customers' satisfaction with ATM banking, the regression analysis of the performance of ATM banking attributes (independent variables) and customers' satisfaction (dependent variable) identifies ATM fees charged, ATMs not out of order, cleanliness of ATMs, accuracy of ATM transactions, ease of access to ATMs, readable slips, convenient location, employee accessibility to solve ATM problems, privacy at ATM stations, employee speed in solving ATM issues, ease of application process for ATM cards and cash availability in ATMs as the key factors that influence customers' satisfaction with ATM banking.

The study further confirmed that reliability and responsiveness of service are the key service quality dimensions that managers need to pay attention to, to achieve customers' satisfaction.

Future Research

Respondents to the research were from urban areas, who have been with their respective banks for a period of over three years, use the ATM at least once every week and 75 per cent were educated to a minimum of a degree. It will be interesting for future researches to assess factors influencing customers' satisfaction with ATMs among respondents with lower levels of education or no education at all, in rural areas, different cultures and regions of the world.

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