Automated Teller Machine (ATM) banking is the second popular access channel to banking services behind branch banking in Malawi which offers competitive advantage in the homogenous market of retail banking products and services. It is important that banks achieve service quality and customer satisfaction to remain competitive through ATMs. The results are from 353 ATM card users where over half are satisfied with ATM services from their respective banks. All the ATM service attributes within the five service quality dimensions are important to ATM service users but performance is perceived good in ATM technology related attributes and poor in employee and management functionality related attributes. The results have further found that all service quality dimensions significantly correlate with customers satisfaction with ATM services and that reliability is the most important dimension followed by responsiveness, empathy, assurance and tangibles are the least important dimension agreeing with previous studies by Berry et al., Parasuraman et al. and Zeithmal et al. However, not all service quality attributes rated important by users contributed to their satisfaction. Therefore, the results designate that for banks to remain competitive through ATM banking efforts should be exerted in providing responsive ATM services. Further investment in newer ATM technologies may have marginal returns in creating competitive advantage since all banks are installing newer ATM technologies that enhance functionality and reliability of ATMs but differences are in the provision of responsive services that augment the ATM services provision.

Key words: Customers’ satisfaction, ATMs, service quality.

Introduction

Customer satisfaction is one of the frequently researched areas in marketing, although satisfaction literature has not yet explicitly or implicitly established a generally accepted definition of satisfaction. One can agree with Oliver (1997) that everyone knows what satisfaction is until asked to give a definition and then nobody seems to know. Various researchers (Churchill and Surprenant, 1982; Day, 1984; Fornell, 1992; Halstead et al., 1994; Oliver, 1997; Swan et al., 1980; Tse and Wilton, 1988; Westbrook, 1980; Westbrook and Oliver, 1981; 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.

This concept of customer satisfaction has become important in firms’ operations and marketing because empirical researches show that it is an important
antecedent of customer loyalty (retention) and long term profitability (Bloemer and Kasper, 1994; Jones and Sasser, 1995; Macintosh and Lockshin, 1997; Taylor and Baker, 1994). Firms recognise that it is more profitable to keep existing customers than to attract new ones. As such efforts to achieve customer satisfaction focus on provision of service quality which influences performance superiority (Poretla and Thanassoulis, 2005) and performance directly affect customer satisfaction (Spreng and Page, 2001; Swan and Combs, 1976).

The retail banking industry in Malawi was dominated by two local commercial banks for decades but today there are over ten commercial banks. The homogenous nature of retail banking products and services poses challenges towards achievement of sustained competitive advantage and profitability.

Auto Teller Machines (ATMs) were introduced in Malawi in the late 1990s and offered competitive advantage during the early years because only few banks could afford installing ATM technology. ATMs were a strategic tool that helped decongest banking halls and further helped cut down operational costs as banks reduced the number of tellers required in the banking halls. The most important factor was the improved accessibility to banking services. ATMs provided a 24 h access to cash and customers’ account information and that attracted customers to open accounts with banks which had installed ATMs. Ideally ATMs helped banks to be competitive, improved customer service and cut down costs (Cabas, 2001) since they facilitated speed of transactions, improved accessibility and saved time for customers. ATMs helped banks to achieve customer satisfaction.

Research problem and objective

Nowadays, each bank in Malawi has its own network of ATMs and that ATMs have become the second most used channel for accessing banking services behind branch banking. However, long queues are becoming common in banking halls. Are ATMs not offering the range of services and level of service quality (SQ) customers expect for their continued preference to other modes of accessing retail banking services? Why are queues becoming common in the banking halls despite increased investments in ATM networks in the country?

Although ATMs have been in use for over a decade in Malawi, not many studies have been conducted on customer satisfaction with ATM banking to analyse factors that determine their usage and competitiveness to help managers craft strategies for positioning ATM technology within the banks’ offering for improved customer satisfaction.

The objective of this study was therefore to measure customers’ satisfaction with ATM banking in Malawi. Specifically, the study was designed to examine the important dimensions of ATM SQ and their performance and then assess customers’ satisfaction with ATM banking based on perceived performance with implications. The study therefore assessed customers’ perceptions of the importance of ATM service attributes, the perceived performance of ATMs in each SQ attribute as offered by banks and finally participants’ overall satisfaction with the ATM banking services.

The research is therefore relevant to customer satisfaction, ATMs and service quality.

Concept of customer satisfaction

Customer satisfaction has been defined by various empirical researchers. Kotler (2000), Westbrook and Oliver (1981) define customer satisfaction as a mental state which results from customers’ comparison of expectations prior to a purchase with performance perceptions after a purchase. According to Halstead et al. (1994), customer satisfaction is a transaction specific affective response from customers’ comparison of product performance to some pre-purchase standard whereas Day (1994) states that customer satisfaction is a post choice evaluative judgment concerning a specific purchase selection. Churchill and Surprenant (1982) define customer satisfaction as summation of satisfaction with various attributes of a product whereas Fornell (1992) define customer satisfaction as an overall post purchase evaluation. It is a feeling developed from an evaluation of the use experience (Cadotte et al., 1987:305) whether the product has performed relatively well or poorly or that the product was suitable or unsuitable for its purpose (Swan et al., 1980).

There are common elements in these definitions as well as several other definitions that are reviewed by Giese and Cote (2002:5) in that customer satisfaction is referred to as a response, emotional or cognitive, pertaining to a particular focus either expectations about a product or consumption experience which occurs at particular time after the consumption, or choice or based on accumulated experience.

That means customer satisfaction with ATM banking is similarly a response to the used experience of ATMs which occurs at a particular time and is based on customers’ accumulated experience of ATM banking services from respective retail banks. The evaluative judgment about satisfaction is conceived as falling somewhere on a bipolar continuum where at the lower end it signifies low level of satisfaction (expectations exceed performance perceptions) and at the higher end it signifies a higher level of satisfaction (performance perceptions exceed expectations).

This concept of customer satisfaction has become of particular importance because empirical researches have shown that it is an antecedent of customer retention (loyalty) (Newman, 2001; Szymigin and Carrigan, 2001; Rust et al., 1994). Customer satisfaction increases sales (Kish, 2000; Levesque and McDougall, 1996), increases
Service quality and customers' satisfaction

Service quality (SQ) is an important construct in the study of customer satisfaction. It is the other most researched area in services marketing (Fisk et al., 1993) and just like customer satisfaction, despite all the studies on SQ there is no commonly accepted definition. SQ is best defined by the consumer of the product or service. It is generally understood, however, that quality implies the totality of features and characteristics of a product or service that bears its ability to satisfy implied or stated needs of consumers. Lewis and Booms (1983) define SQ as a measure of how well a service delivered matches the customers’ expectations, a definition that has been used by other researchers that include Lewis and Mitchell (1990) and Asubonteng et al. (1996). Robinson (1999) defines SQ as an attitude or global judgment about superiority of a service whereas Gronroos (1990) defines SQ as an outcome of a comparison that customers make between their expectations about a service and their perceptions of the manner in which the service has been performed. Interestingly, Gronroos (1990)’ definition of SQ has similarities with the definition of customer satisfaction by Westbrook (1980) in the sense that both are responses or outcomes of comparison between expectations and perceived performance.

However, SQ is important in the study of customer satisfaction because empirical researches have shown that it is an antecedent of customer satisfaction (Anderson and Sullivan, 1993; Anderson and Fornell, 1994). According to Poretla and Thanassoulis (2005), SQ influences performance superiority and that performance directly affects customer satisfaction (Swan and Combs, 1976). Therefore, SQ is the critical aspect of customer experience that determines customers’ satisfaction and Lewis et al. (1994) ascertain that excellence in SQ has become an imperative for organisational sustainability. It is not surprising therefore that several studies have focused on investigating the interrelationships between SQ and customer satisfaction (Bitner and Hubert, 1994; Bolton and Drew, 1991; Woodside et al., 1989) and that measurement of SQ has been used as a precursor in the process of measuring and understanding customers’ satisfaction.

Measurement approaches of customers’ satisfaction

From the reviewed definitions, customers’ satisfaction has generally been understood as the feeling generated after an evaluation of perceived performance of a product or service against expectations before the purchase, choice, usage or experience whether the outcome was as good as it was supposed to be. And the measurement of customer satisfaction has therefore been dominated by expectations-disconfirmation paradigm (Parasuraman et al., 1985). Within this framework, customer satisfaction is hypothesized to be a function of expectations about a product/service and subsequent experience of product/service and expectations are used as a standard of comparison.

One measurement approach, the Importance-Performance model (after Fishbein and Ajzen, 1975) proposes that customers’ 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) their beliefs about the degree to which the product/service has each attribute. When the perceived performance of the product/service is measured, the importance scores are weighed against the performance scores on each attribute to determine the product/service strengths or weaknesses. The measurement model takes into account product/service attributes considered important by customers and what customers consider the product/service to have and that determines overall satisfaction with the product/service. This model has received considerable empirical support in literature (Sheppard et al., 1988).

The second measurement approach, the Expectations-Performance (Parasuraman et al., 1985) is based on the proposition that customers evaluate the quality of a product or service by comparing pre-consumption expectations with their post-consumption perceptions (performance). With this approach expectations are measured before purchase, choice, use or consumption and perceived performance of the product/service is measured after purchase, choice, use or consumption to measure customers’ satisfaction. This approach is the basis of a popular model, SERVQUAL by Parasuraman et al. (1988).

The third approach to measuring customer satisfaction is the Performance Only (after Cronin and Taylor, 1992) which challenges the other two approaches by proposing that evaluations of a product or service are affected by the perceptions of the performance (or experience) only. The approach by Cronin and Taylor (1992) therefore ignores the importance of attributes and customers’ expectations in the consumer satisfaction equation creating a performance only based measure of SQ called
the SERVPERF model.

From the three approaches there is a consensus that customer satisfaction comes after an overall judgment about product or service superiority, the judgment that elicits from comparing importance with performance of products/services attributes (Fishbein and Ajzen, 1975), or comparing performance with expectations based on ideal standards (Parasuraman et al., 1988) or from perceptions of performance alone (Cronin and Taylor, 1992). Therefore, customer satisfaction with ATMs could either be based on performance of ATMs only. However, customers have levels of expectations on the performance of ATM services offered by their banks which could form the underlying basis when measuring their satisfaction with the services received. On the other hand, customers have perceived important attributes about ATM services which carry weight when making judgments about the performance of ATM services and their satisfaction.

Measurement models of service quality

SQ is an antecedent of customer satisfaction (Anderson and Sullivan, 1993; Anderson and Fornell, 1994) and a precursor in the measurement of customer satisfaction. At the centre of making product/service quality comparisons are the product/service attributes. Models conceptualising SQ reveal that SQ is a multi-dimension and multi-attribute concept (Gronroos, 1984; 1990; Parasuraman et al., 1985; Rust and Oliver, 1994, Cronin and Taylor, 1992; Haywood-Farmer, 1988) but neither model generally agrees with the other on the nature or context of the dimensions of SQ, a fact observed by Brady and Cronin (2001).

In the SERVQUAL model, consumers rate the product or service on a set of general attributes presented in a Likert type scale (Parasuraman et al., 1988). This model has been adopted in various studies (Fick and Ritchie, 1991) although it has received criticism from other quarters. Carman (1990) argues that subjects should be asked to rate a product or service on criteria that are relevant to the specific product or service rather than a general or ideal criteria because that, according to Tribe and Snaith (1999), carries an in-built bias towards dissatisfaction since the expectations are determined by the ideal product or service provision. The researchers therefore propose that the SERVQUAL model be product specific rather than general so that a realistic and more valid assessment of a product or service attributes’ performance can be obtained.

Several other models have been developed and used to conceptualise and measure SQ in the process of trying to understand customers’ satisfaction. Seth et al. (2005) provide a good review of nineteen SQ models used to conceptualise and measure SQ and that include: Technical and Functional Models (Gronroos, 1984); GAP Model which is the basis of SERVQUAL model (Parasuraman et al., 1985, 1988); Attribute Service Quality Model (Haywood-Farmer, 1988); Synthesised Model of Service Quality (Brogowitz et al, 1990); Performance Only Model (Cronin and Taylor, 1992); Ideal Value Model of Service Quality (Mattson, 1992); Evaluated Performance and Normed Quality Model (Teas, 1993); IT Alignment Model (Berkley and Gupta, 1993); Attribute and Overall Affect Model (Dabhoklar, 1996); Model of Perceived Service Quality and Satisfaction (Spreng and Mackoy, 1996); PCP Attribute Model (Phillip and Hazlett, 1997); Retail Service Quality and Perceived Value Model (Sweeney et al, 1997); Service Quality Customer Value and Customer Satis-faction Model (Oh, 1999); Antecedents and Mediator Model (Dabhoklar et al, 2000) and Internal Service Quality Model (Frost and Kumar, 2000).

Of these models the SERVQUAL and SERVPERF models were of practical interest to this study. Parasuraman et al. (1988) developed SERVQUAL model based on the GAP Analysis and identifies five dimensions of SQ that include tangibles, reliability, responsiveness, assurance and empathy with 22 items within the five dimensions.

SERVQUAL model has been widely used in SQ and customer satisfaction studies across industries (Aldlaigan and Buttle, 2002; Asubonteng et al., 1996; Boulding et al., 1993; Yavas et al., 2004). However, Buttle (1996) found serious concerns with the number of dimensions in SERVQUAL as well as their inconsistency when applied in different contexts; whereas Woo and Ennew (2005) found that in business service markets, the dimensions were completely different. Carman (1990) then warned that SERVQUAL provides a start for items development and that all items within the SQ dimensions need to have validity and reliability checks before commercial application. Therefore, the five dimensions and items should only be used as a starting point rather than as a tool that can be immediately used in the field.

Following on from the works of Parasuraman et al. (1988) Cronin and Taylor (1992) developed the performance only model for measuring SQ based on the belief that SQ is a form of consumer attitude and performance only measure is an enhanced means of measuring SQ not the performance-expectations disconfirmation. Cronin and Taylor (1992) therefore use the same multi-dimension and multi-attribute scale and called the SERVPERF where SQ is evaluated by perceptions of performance only without expectations or important weights being used as a standard of comparison. SERVPERF was tested in four industries that included banks, pest control, dry cleaning and fast food and it was found it outperformed SERVQUAL. Several other studies agree that customers’ assessment of continuously provided products or services may depend solely on performance (Bolton and Drew, 1991; Boulding et al., 1993; Gottlieb et al., 1994) and that SERVPERF may have less bias than SERVQUAL in measuring SQ (Cronin and Taylor, 1992; Llusar and Zornoza, 2000; Quester et al., 1995).
The understanding from this review demonstrates that the SQ dimensions are the starting point and it requires that items in each dimension be properly defined and tested for their validity to measure SQ in particular study context. Therefore applying the definitions of the SQ dimensions in an ATM study, the tangibles would comprise the physical equipment, its appearance, support services and even the appearance of service personnel. Reliability would refer to the degree to which the ATMs offer accurate, dependable and timely services to the users, whereas responsiveness would be the willingness of ATM service providers to help their customers and meet their needs and wants. In difficult situations it would also mean the ATM service provider's ability to respond effectively. Assurance would refer to the issues of confidence and trust that customers have towards ATMs and feeling of safety in usage in case of perceived problems and lastly empathy would refer to the attention and care that the ATM service provider may offer to its customers which may also refer to convenient operating arrangements in the use of ATMs.

ATM service quality attributes

At the centre of measuring SQ are the product or service attributes. There has been growing literature on the measurement of customer satisfaction with banks and ATMs where the focus has been on developing measurement models, determining ATM SQ attributes and measuring customer satisfaction itself. The commonly used models have been SERVQUAL (Parasuraman et al., 1988), SERVPERF (Cronin and Taylor, 1992) and BANKSERV, a model developed by Avkiran (1994) based on SERVQUAL. All these models are based on the similar dimensions of SQ that include tangibles, reliability, responsiveness, empathy and assurance. However, depending on the product or service under study the attributes in each of the dimensions have been different.

Several empirical studies have identified and verified a number of common elements within the five dimensions for ATM SQ. The attributes of ATM SQ identified by empirical researchers include: user friendliness of ATM systems (Joseph and Stone, 2003; Lovelock, 2000), speed of ATM operations (Patricio et al., 2003; Yavas et al., 2004), cash availability in ATMs (Dilijonas et al., 2009), accuracy of transactions by ATMs (Dilijonas et al., 2009, Shamsdouha et al., 2005), ATMs not out of order (Islam et al., 2005; Patricio et al., 2003; Howcroft, 1991), waiting times at ATMs (Moutinho and Brownie, 1989), employee effectiveness in solving ATM problems, employee speed in responding to ATM problems (Islam et al., 2005), returning fast swallowed cards (Islam et al., 2005), quick replacement of lost cards, bank employee friendliness, security at ATMs (Al Hawari and Ward, 2006; Dilijonas et al., 2009; Islam et al., 2005; Joseph and Stone, 2003; Shamsdouha et al, 2005), fees charged (Athanassopoulos, 2000; Dilijonas et al, 2009), convenient location (Al Hawari and Ward, 2006; Dilijonas et al., 2009; Islam et al., 2005; Joseph and Stone, 2003; Lovelock, 2000; Mouithno and Brownie, 1989), accessibility of employees to solve ATM problems, easy access to ATMs (Joseph and Stone, 2003), advice on ATM usage and security, privacy when using ATMs (Shamsdouha et al., 2005), easy process of applying for ATM cards, cleanliness of ATMs and ATM stations, appearance of corporate branding on ATMs, issuing of clean or new notes (Islam et al., 2005), issuing of readable slips, accessibility of a wide range of services via ATMs and the number of ATMs per ATM locations (Dilijonas et al., 2009; Islam et al., 2005; Joseph and Stone, 2003; Lovelock, 2000). There is a total of 25 ATM SQ attributes validated by empirical researchers that the study adopted and tested for measuring customer satisfaction with ATM banking services in Malawi.

RESEARCH MODEL

From the review of literature the following understanding comes to the fore. SQ is an antecedent of customer satisfaction. A firm has to provide quality products, services and performances to achieve customer satisfaction. Customers will measure quality of products or services based on perceived performance of attributes of the products or services within the five dimensions; tangibles, reliability, responsiveness, assurance and empathy (Parasuraman et al., 1988). If customer satisfaction is achieved, the firm benefits through retention of satisfied customers who make repeat purchases and word of mouth recommendations resulting into increased sales and profitability of the business as depicted diagrammatically (Figure 1). The diagram therefore constitutes the study model that guided the research and provided the structure for its execution.

The model helped the researcher assess customers’ satisfaction with ATM banking in Malawi by providing a structure for assessing customers’ perceived SQ of ATM banking in Malawi through the measurement of their perceptions of the importance and performance of ATM SQ attributes in each of the five dimensions (tangibles, responsiveness, reliability, assurance and empathy) and then analysing the relationships between importance and performance of ATM SQ attributes and dimensions; and customers’ overall satisfaction with ATM banking services offered by respective banks in Malawi.

RESEARCH METHODOLOGY

The study adopted the importance-performance approach (Fishbein and Ajzen, 1975) to measuring customer satisfaction. This enabled the researcher to ascertain ATM attributes participants considered important then assessed their perceived performance and lastly, participants’ satisfaction with ATM banking. Therefore measurement of satisfaction is based on performance only (SERVPERF) whilst
the importance element qualifies performance with implications to managers of ATM services. In so doing, the researcher is able to contribute to the understanding of important attributes of ATMs in local context of the study and the areas banks would require to improve in for the overall enhancement of ATM SQ in Malawi.

To develop the measurement scales, the study adopted 25 validated ATM SQ attributes from various empirical studies (Al Hawari and Ward, 2006; Athanassopoulos, 2000; Dijijonas et al., 2009; Howcroft, 1991; Islam et al., 2005; Joseph and Stone, 2003; Lovelock, 2000; Moutihno and Brownlie, 1989; Patricio et al., 2003; Shamsdouha et al., 2005; Yavas et al., 2004). The items comprised tangibles (6 items), reliability (6 items), responsiveness (6 items), assurance (3 items) and empathy (4 items) for the five SQ dimensions provided by Parasuraman et al. (1988). The participants were asked to rate the ATM SQ attributes on Likert scales of 1 to 5 where 1 was very unimportant / very poor, 2-unimportant / poor, 3-neutral, 4-important / good and 5-very important / very good on importance and performance scales respectively.

The questionnaire was piloted on 30 ATM card holders to assess its comprehensibility and structure before being administered to a convenient sample of 500 customers who held and used ATM cards from five commercial banks in Malawi. The convenient sample of ATM card holders was opted for because banks approached could not make available details of ATM card holders as this is classified bank information. The Cronbach’s Alpha of 0.776 and 0.853 for the importance and performance measurement scales respectively demonstrated the scales’ ability to provide reliable measurement within the two constructs with internal consistency (Nunnally and Bernstein, 1994). The questionnaire was administered through email where two rounds of reminders were sent at a week’s interval to improve on the participants’ response rate.

Limitations

The study results are from urban ATM users in Malawi. There may be factors such as culture, experience, education, exposure, tolerance levels of SQ (Johnston, 1995) that would differentiate the study sample from ATM users in rural contexts or other countries. For example, all the respondents are educated at undergraduate level to postgraduate level which does not reflect the levels of education among the general population in Malawi. Therefore generalization of the results to a wider population or banking industry should be taken with caution.

RESULTS AND DISCUSSION

95.5% of the respondents in the study have been with their banks for over 2 years and 87.2% use ATM services at least every week. 353 responses were generated from a study sample of 500 ATM card users representing a 70.6% response rate where 68.8% of the respondents were male and 31.2% female. 30.3% of the respondents were undergraduates, 52.7% graduates and 17.0% post-graduates. With these demographic characteristics, the study perceived the respondents were knowledgeable and capable of rating the ATM services from their respective banks and able to provide opinion on the perceived importance and level of performance of each ATM SQ attribute and lastly provide their perceived overall satisfaction with the ATM services offered by their respective banks.

The results in Table 1 show the total percentage of respondents who rated each ATM SQ attribute important or very important (4 or 5) and also rated performance of each attribute as either good or very good (4 or 5) on a Likert scale. The table further shows the strength of association (correlation) between the performance of each ATM SQ attribute and customer’s satisfaction with ATM services using Pearson correlation and the statistical significance of that association.

attributes within the ATM SQ construct which this study adopted for measuring ATM SQ and satisfaction. 80% of the attributes across the five dimensions were rated important to very important by over 90% of the respondents. ATM system userbility, speed of ATMs, cash availability, transaction accuracy, ATMs not out of order, employee speed, convenient location and easy ATM access were considered important ATM SQ attributes by 100% of respondents to the study.

When SQ dimensions are ranked based on average importance ratings of all attributes in each dimension, reliability (99.2%) ranks first in importance followed by responsiveness (95.8%), empathy (92.2%), assurance (88.5%) and lastly tangibles (87.4%). Reliability refers to the degree to which ATMs offer accurate, dependable and timely service; responsiveness is the willingness of ATM service providers to help their customers and meet their needs and wants. Empathy is the attention and care that ATM service providers may offer to their customers whereas assurance is the confidence and trust that customers have towards ATM usage and tangibles refer to the physical equipment or items and its appearance and further include the appearance of service personnel.

Therefore, these study results find that within the five SQ dimensions, with regard to ATM services, reliability is the most important dimension followed by responsiveness in delivery of the ATM service and that tangibles are the least important to customers of ATM services. These results agree with Parasuraman et al. (1988) and Zeithaml et al. (1990) who reported that regardless of the service studied, reliability was the most important dimension followed by responsiveness (Berry et al., 1985) and that tangibles are of least concern to service customers. ATMs card users want a reliable ATM service from their bank as highlighted by the highest ratings on importance scores on attributes in this SQ dimension. ATM card users want ATM systems that are user friendly, ATMs that are fast, ATMs that do not run out of cash, want accurate transactions, ATMs that are not out of order and no long queues at ATMs. The reliable service has to be complimented by responsive service delivery of ATM services starting with easy application processes for ATM cards and employees that are effective and fast in dealing with ATM issues.

### Table 1. Rating of ATM attribute.

<table>
<thead>
<tr>
<th>Item</th>
<th>Importance</th>
<th>Performance</th>
<th>ATM SQ performance correlation to Customer Satisfaction with ATM service</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Pearson Correlation</td>
</tr>
<tr>
<td>Cleanliness of ATMs</td>
<td>95.5</td>
<td>78.7</td>
<td>.508**</td>
</tr>
<tr>
<td>Brand Appearance</td>
<td>78.4</td>
<td>87.0</td>
<td>.011</td>
</tr>
<tr>
<td>Issue of Clean Notes</td>
<td>81.6</td>
<td>70.2</td>
<td>.101</td>
</tr>
<tr>
<td>Readable Slips</td>
<td>95.7</td>
<td>81.6</td>
<td>.517**</td>
</tr>
<tr>
<td>Range of Services</td>
<td>90.9</td>
<td>69.9</td>
<td>-.077</td>
</tr>
<tr>
<td>Number of ATMs per Station</td>
<td>82.2</td>
<td>39.1</td>
<td>-.006</td>
</tr>
<tr>
<td>ATM System Usability</td>
<td>100.0</td>
<td>91.5</td>
<td>.178**</td>
</tr>
<tr>
<td>Speed of ATMs</td>
<td>100.0</td>
<td>70.0</td>
<td>.394**</td>
</tr>
<tr>
<td>Cash Availability</td>
<td>100.0</td>
<td>69.7</td>
<td>.635**</td>
</tr>
<tr>
<td>Transaction Accuracy</td>
<td>100.0</td>
<td>70.2</td>
<td>.514**</td>
</tr>
<tr>
<td>ATM not out of order</td>
<td>99.7</td>
<td>51.9</td>
<td>.612**</td>
</tr>
<tr>
<td>Waiting times at ATMs</td>
<td>95.7</td>
<td>26.4</td>
<td>.400**</td>
</tr>
<tr>
<td>Easy Application Process</td>
<td>95.2</td>
<td>36.1</td>
<td>.475**</td>
</tr>
<tr>
<td>Employee Effectiveness</td>
<td>95.5</td>
<td>36.1</td>
<td>.402**</td>
</tr>
<tr>
<td>Employee Speed</td>
<td>99.7</td>
<td>26.0</td>
<td>.457**</td>
</tr>
<tr>
<td>Fast return of Cards</td>
<td>90.3</td>
<td>13.0</td>
<td>-.111**</td>
</tr>
<tr>
<td>Quick replacement of Cards</td>
<td>95.8</td>
<td>8.8</td>
<td>.014</td>
</tr>
<tr>
<td>Employee Friendliness</td>
<td>98.3</td>
<td>70.3</td>
<td>-.014</td>
</tr>
<tr>
<td>Privacy at ATMs</td>
<td>100.0</td>
<td>56.1</td>
<td>.574**</td>
</tr>
<tr>
<td>Security at ATMs</td>
<td>95.7</td>
<td>60.6</td>
<td>.040</td>
</tr>
<tr>
<td>ATM Usage &amp; Security Advice</td>
<td>69.9</td>
<td>30.3</td>
<td>-.153**</td>
</tr>
<tr>
<td>Convenient Location</td>
<td>100.0</td>
<td>38.8</td>
<td>.330**</td>
</tr>
<tr>
<td>Easy ATM access</td>
<td>100.0</td>
<td>39.1</td>
<td>.464**</td>
</tr>
<tr>
<td>Employee Accessibility</td>
<td>95.5</td>
<td>30.8</td>
<td>.509**</td>
</tr>
<tr>
<td>ATM Fees Charged</td>
<td>73.4</td>
<td>26.9</td>
<td>.655**</td>
</tr>
</tbody>
</table>

**Correlation is significant at the 0.01 level (2-tailed); *Correlation is significant at the 0.05 level (2-tailed).
On the performance of ATM SQ attributes and dimensions, the results present a different perspective. Performance in tangibles SQ dimension ranks the highest followed by reliability. These are the only two dimensions to be ranked to be performing ‘good’ to ‘very good’ by over 50% of the respondents to the study. Notably corporate branding appearance was rated to be performing well by 87% of the respondents surpassing the 78.4% who rated it as important. ATM services have been rated to perform extremely well in system usability (91.5%), corporate brand appearance (87.0%), readable slips (81.6%), cleanliness of ATMs (78.7%), employee friendliness (70.3%), transaction accuracy (70.2%), issuing of clean notes (70.2%), ATM speed (70.0%), range of services offered by ATMs (69.9%), and availability of cash in ATMs (69.7%).

Performance ratings on average have been very low in empathy (33.9%) and responsiveness (31.7%). Banks in Malawi are performing poorly in the provision of responsive ATM services. Employee effectiveness was rated good by only 36.1% of the participants; ATM card application process, 36.1%; convenient location of ATM, 38.8%; ease of access to ATMs, 39.1%; employee speed, 26.0%; fast return of cards, 13.0% and quick replacement of cards, 8.8% and all these attributes perceived low in performance relate to personnel and management decision making.

Therefore, it is interesting to note that attributes in the tangibles and reliability dimensions whose performances are perceived good, are closely related to performance of ATM technology while the attributes in responsiveness, assurance and empathy dimensions whose performances are perceived not so good relate to personnel and management functionality. This demonstrates that banks in Malawi have invested in effective ATM technologies that enhance the performance of ATM SQ but the downside is the supporting services and management decisions in the delivery of ATM services. This study therefore identifies that whilst every bank invests in modern ATM technologies, competitive advantage would no longer be achieved through ATM technology itself but through effective decision making and provision of responsive ATM services. Customers want easy ATM card application processes, effective and fast employees, fully accessible, to deal with ATM issues and ATM managers that are making good decisions in locating ATMs in convenient and easily accessible locations.

Overall 53.0% (over half) of the respondents were satisfied with ATM services provided by their banks in Malawi. Participants rated their satisfaction with ATM services on a Likert scale where 1 was ‘very dissatisfied’, 2 – ‘dissatisfied’, 3 – ‘neither dissatisfied nor satisfied’, 4 – ‘satisfied’ and 5 – ‘very satisfied’.

**ATM service satisfaction**

The correlation analysis between ATM service satisfaction and ATM SQ attributes shows that all SQ attributes under reliability and empathy dimensions significantly correlate to customers’ satisfaction. Notably cash availability, ATMs not out of order and ATM fees strongly and significantly correlate to ATM service satisfaction. Under the responsiveness dimension, easy application process, employee effectiveness and employee speed significantly correlate to customers’ satisfaction with ATM services. Furthermore, employee effectiveness and employee speed correlates to fast return of cards which does not in itself correlate to customers’ satisfaction.

Privacy at ATMs is the only one of the three attributes under assurance that significantly correlates with ATM service satisfaction whilst under tangibles despite a number of SQ attributes being rated to perform well, only two attributes; cleanliness of ATMs and readable slips significantly correlates to ATM service satisfaction.

Therefore these results demonstrate that all SQ dimensions significantly correlate to customer satisfaction at varying degrees depending on the type of SQ attribute they contain. Reliability is the SQ dimension that strongly and significantly correlates with ATM service satisfaction among the five SQ dimensions. These results concur with Khan (2010) who found positive and statistically strong relationships between ATM SQ and customer satisfaction with ATMs in Pakistan. The study results further show that despite ATM SQ attributes being rated important by the respondents, not all SQ attributes influence satisfaction. For example; issue of clean notes, range of services offered by ATMs, number of ATMs per station and security at ATMs, although participants rated these SQ attributes as important in the use of ATMs and some of these attributes even performed well, they do not have impact on satisfaction with ATM services.

This draws the study to the important concept of satisfiers and dissatisfiers (Johnston, 1995) within the customer satisfaction construct. Swan and Combs (1976) note that as customers judge products or services on a range of attributes, some SQ attributes are relatively important in determining satisfaction while others are not critical to customers’ satisfaction but are related to dissatisfaction when performance on them is not satisfactory. Therefore the provision of security at ATMs, a range of services through ATMs or a number of ATMs per station may not affect customers’ satisfaction with ATM service but no provision of same may cause dissatisfaction, among customers, with the ATM services offered by their respective banks.

Therefore care should be taken on such important SQ attributes that despite not contributing to customers satisfaction their provision is necessary as they can be the source of dissatisfaction when not provided.

**Conclusion**

This study has found that over half of the respondents are satisfied with ATM services from their respective
banks in Malawi. All the SQ attributes adopted from empirical researches are valid attributes of ATM SQ and that all the five SQ dimensions significantly associate with customer satisfaction. The study has agreed with Parasuraman et al. (1988) and Zeithaml (1990) that reliability is the most important SQ dimension followed by responsiveness, empathy and assurance and tangibles are the least important to customers’ satisfaction.

The study has found that all ATM SQ attributes have been rated important by customers but not all of them significantly affect satisfaction with ATM services. That strongly suggests that important SQ attributes that do not associate with satisfaction would be dissatisfiers; meaning that they are the necessary SQ attributes which may not cause customer satisfaction with ATM services but their absence may cause customer dissatisfaction with ATM services.

The ATM technologies in Malawi are user friendly, have good operational speed, produce accurate transactions, do not frequently break down, produce readable slips, and offer a range of banking services. However, since all banks have of late been investing in these newest ATM technologies that provide reliable services, it is through ATM service responsiveness and empathy that banks would create competitive advantage and achieve more customer satisfaction not through ATM technology itself as it were in the late 1990s when ATM technology was been introduced to the market in Malawi. While all ATM SQ attributes associated with technology have been perceived good performers, all attributes associated with employee performance and management functionality have been perceived not so good in performance. There is a requirement to improve in ATM cards application processes, employee effectiveness and speed in handling ATM issues such as fast return of cards and quick replacement of cards. Good management decisions are required when installing ATMs to provide customers with ease of access and convenience in the usage of ATM services to ensure increased preference to ATM banking. Therefore to create competitive advantage through ATM banking in a country like Malawi, banks need to improve performances in responsiveness and empathy SQ dimensions.

Future research

It will be necessary to replicate this study on a sample different in demographic characteristics such as having low levels of education and in rural contexts for comparison of study results. Secondly, the growing in importance of other access channels to banking products and services in the third world such as mobile banking and internet banking necessitates a study on the impact of ATM banking on customers’ satisfaction with their banks. This would help understand issues of importance in developing ATM banking as a strategic access channel for bank products and services.
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