

A study of customer satisfaction on select service dimensions with reference to ATMs and CDMs services in Oman

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Key words

ATM, CDM, Customer satisfaction, Primary data, Bank

Abstract

In order to provide better services to customers, banks have been using different types of online banking, ATMs, and CDMs. A very large proportion of bank customers use ATMs and CDMs for their routine operations. This study endeavors to gauge the customer satisfaction of ATM and CDM users using six dimensions- accessibility, convenience, efficiency, responsiveness, security & privacy, and reliability. These dimensions were selected based on the literature review and experts' suggestions. Questionnaire, having closed ended questions only and duly tested in a pilot study, was used for primary data collection. A research model has been developed which consists of the six dimensions as response variables and customer satisfaction as latent variable. Descriptive statistics and structural equation modeling (SEM) technics were applied. The results revealed that all the selected dimensions are found to be significant in influencing the customer satisfaction level.

1. Introduction

Information technology and the increasing usage of interest had revolutionized and brought about global change in the manner in which the business is done today. The impact is so significant that it had influenced every aspect of an individual life style. Consumers across the globe has increasingly being accessing the 'market space' rather than the 'market place' (Kotler, 2002). The banking industry is no exception to this wave of IT. In fact, it was the first industry to fully integrate and provide IT based products and services. Gone are the days when customer had to go to the bank to either deposit or withdraw cash.

Banks have transformed themselves from just conventional banks offering a few products to 'Universal banks', wherein a customer could shop for any and every type of financial products and services. Electronic banking is the key for the success of the banking industry. The 'hole in the wall' concept called Automated Teller Machine (ATM) and Cash Deposit Machines(CDMs) are a common sight and customers are increasingly becoming dependent on services offered by the ATMs, which has transformed into the main channel of distribution for banks due to its increasing popularity.

As the global banking sector has developed and reach has increased immensely due to vigorous policy initiative for financial inclusions in almost all countries, the dependence and trust of customers on the banking sector too has enhanced with a multiple progression. It has become imperative to meet and match the expectations of the customers in terms of the services being delivered by banks. With the usage of ATMs and CDMs on the increase, which is non personal service delivery mechanism, it is becoming increasing challenging to satisfy the customers on all possible service dimensions expected to be delivered in an effective manner by the banking sector.

This study is an attempt to explore and find out the level of the customer satisfaction on select service dimensions with reference to the Facilities of ATMs and CDMs among residents in the Sultanate of Oman

2. Literature Review

ATM invention has been a subject of debate as to who invented it first. In *Inventions & Technology* magazine (2000), in the late 1930s, Luther George Simjian started the first version of the ATM. Later its versions were improved and deployed by many banks and were called cash machine or cash dispenser referring to the Automated Teller Machines (Kevin & David 2008). With time due to its increasing popularity, ATM had become an important tool to retain customers and maintain competitive advantages at the same increase profitability (Folorunso et al, 2010). Increasingly banks started to depute more ATMs resulting in fewer branches as outlet and cutting down the number of employees (Moutinho & Smith, 2000). ATMs and CDMs enables customers to either deposit or withdraw cash at more convenient time and places than during banking hours at branch (Muhammed 2010).

As ATMs started to gain popularity due to their ease of operations, banks increasingly started to pay more importance to this service and laid more and more stress on the service quality of Automatic Teller Machines as they become an instrument of strategic competitiveness in a dynamic business environment. Santos (2003) defined the meaning of quality of service to the customers using electronic networks such as cash deposit machines, automated teller machines, on line banking etc. Service dimensions to gauge the overall satisfaction level of customers has already been proposed in the form of SERVQUAL instrument which contains five dimensions: reliability, responsiveness, assurance, empathy, and tangibles. Parsuraman et al (1988). Later Zeithamal et al (2000) opined that flexibility, access, ease of navigation, site aesthetics, efficiency, price knowledge, and customization are additional dimension of great importance- Res- Qual and E-S-Qual scales were developed by Parasuraman et al (2005) to assess e-service quality and used efficiency, fulfilment, system availability. Privacy, responsiveness, compensation and contact as service quality dimensions. ATM services enhance operations and customer satisfaction in terms of flexibility of time; add value in terms of speedy handling of voluminous transactions (Komal 2009). Yavas, et al (2004) are of the opinion that customer focused ATM delivery mechanism that satisfies their needs and increase operational performance is an important dimension for banks to keep competitive advantage. Lassar et al (2005), in his study opined that there is a significant relationship between service quality and performance based on improved productivity, increased market share, enhanced customers' loyalty, enhanced staff morale and sustained profitability.

Davies, Moutinho and Curry (1996) opined that cost involved in the use of ATM and its efficient functioning are important factors that influence customers' satisfaction related to ATM service quality. In a previous study, Moutinho (1992) had already examined the relationship between the dimension of usage rate and performance expectations with customers' prolonged satisfaction with ATM services. Joseph and Stone (2003) in their study in the United States found that the quality of service from customers' perception is related with easily accessible location of the machines, their user friendly system, and security. Shamsdouha, Choudhary and Ahsan (2005) established that 24 hours' service, accuracy and convenient location are the main predictors of customers' satisfaction. Dilijonas, Krikscuiunen, Sakaloukas and Simutis (2009) explored that adequate number of ATMs, convenient and secure location, user friendly system, speed, minimum errors, high uptime, cash backup, cost and service coverage are essential service quality aspects of ATM service. Secure and convenient location, adequate number of

ATMs, user friendly system and functionality of ATM play important role in customer satisfaction (Joseph and Stone 2003). Customer who are investors are also susceptible to herd behavior and therefore any misinformation could have a negative effect on the reputation of the serviceability of the banks in Oman, Jamil, S. A., & Khan, K. (2016)

However, numerous studies also identified the factor which often leads to dissatisfaction among customers. Customers' loyalty is based on intense competition and services base latest technology. based new services are shaping customers' loyalty. These have resulted in the switching of banks by customers based on competitive services (Lewis et al, 1994). Howcroft(1991) also noted that frequent break down of Automated Teller Machines was the main cause of dissatisfaction among customers.

3. Objectives of the Study

The basic objectives of the study are:

- To examine the important dimensions of ATM service quality.
- To examine the customer satisfaction with ATMs services in Oman.
- To establish and suggest how ATM service could be improved in Oman.

4. Methodology:

In order to study the service dimensions and factors which influence customer's satisfaction of ATM in the Sultanate of Oman, a well-structured questionnaire was designed and tested which included six important service quality dimensions on which the customers' feedback was obtained. Primary data was obtained from a sample (N=180) customers using stratified sampling technique. Four main cities of Oman -Sohar, Nizwa, Muscat, and Salalah were covered. The survey questionnaire consisted of 25 statements based on six service quality dimensions. A Likert scale comprising five points starting from 'strongly disagree' to 'strongly agree' was used as the scale for all the statements in the questionnaire. Analysis of the data was done using statistical tools like Cronbach alpha reliability test, descriptive statistics, and other tools of inferential statistics.

5. Data analysis

5.1. Reliability Test:

Reliability is a measure of internal consistency or reliability of attitudinal or behavioral attributes. It is measured by Cronbach's Alpha which is a measure of the validity of each item used in the survey. According to Hendrickson et al (1993) and McGraw and Wong (1996) Cronbach alpha of a scale should be at least 0.700 for items to be used together as a scale only then the survey instrument is considered as reliable. The reliability status of individual dimensions of the items used is shown in the following table:

Dimensions	Value of Cronbach' Alpha
Accessibility	0.745
Efficiency	0.813
Security & Privacy	0.820
Convenience	0.792
Responsiveness	0.728
Reliability	0.698

5.2. Analysis of the Selected Dimensions:

Figure 1 to Figure 6 below show the responses related to the selected dimensions- Accessibility, Efficiency, Security & Privacy, Convenience, Responsiveness, and Reliability. It is easily

noticeable from the figures below that all the dimensions have been highly rated by the bank customers.

Figure 1

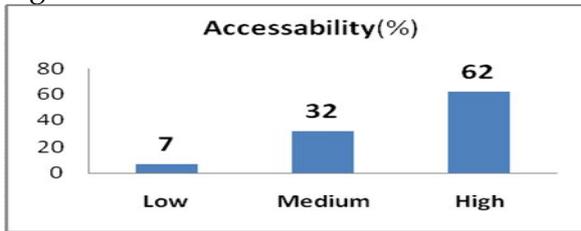


Figure2

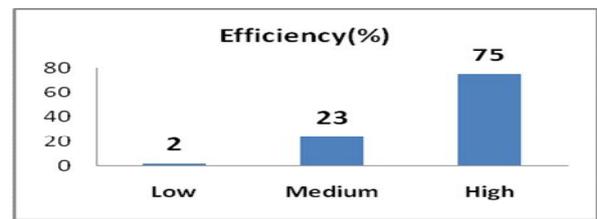


Figure 3

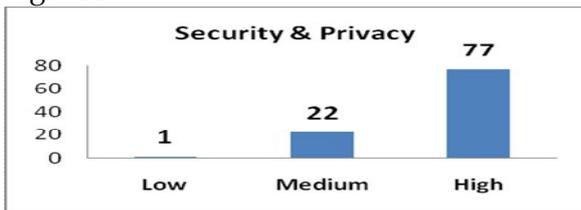


Figure 4

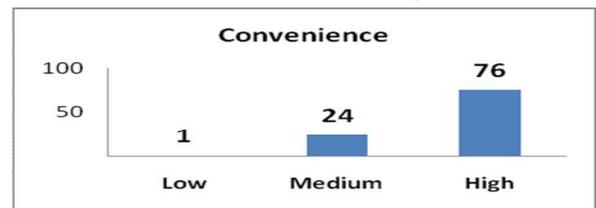


Figure 5

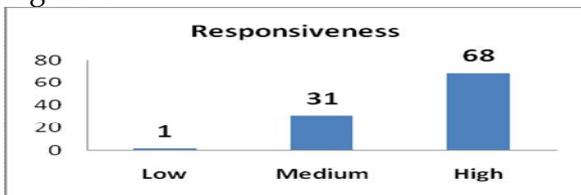


Figure 6



5.3. Average Response of the Dimensions:

Figure 7 below shows the average level of satisfaction on the scale of 5 in all the six dimensions of the ATM users surveyed and the result depicts that the security and reliability is the most satisfied dimension among the customer which could be attributed to the overall excellent law and order environment in the country and till date a minimum number of incident of hacking of banks networks. The dimension of convenience is second most satisfied and shows that customers believe that the ATM machines are quite modern and customer friendly in term of ease of the language and the display of the menus etc.

The dimension of reliability is rated the least thought still it is above the 3.5 level and this could be attributed to the customer’s dissatisfaction with ATM running out of cash, the denomination of currency available and dispensed etc.

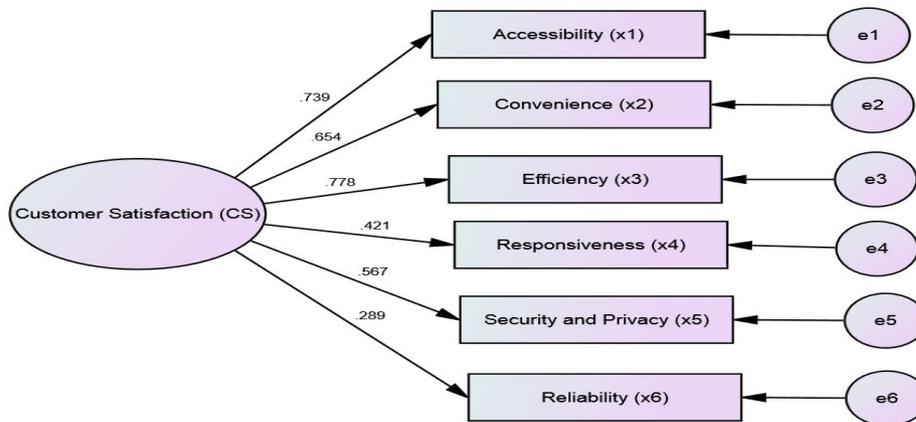
Figure 7



5.4. Customer Satisfaction:

A recursive Structural Equation Modeling (SEM) was applied to establish and estimate the customer satisfaction of ATM users. The figure below shows measurement model showing the relationship of the selected factors as manifest variables with customer satisfaction as a latent variable with standardized estimates.

Figure 8



The above results suggest the following model:

$$CS = 0.739x_1 + 0.654x_2 + 0.778x_3 + 0.421x_4 + 0.567x_5 + 0.29x_6$$

5.4.1. Model Fitness Indexes:

Few of the commonly used indexes are shown in the table below. Bentler and Bonett (1980) opined that in order to have overall understanding of the model other indexes should be considered together. Chi-square, (χ^2), Root Mean Square Error of Approximation (RMSEA), and Absolute Goodness of Fit (AGFI) indexes are taken into consideration from absolute fit category. Normed Fit Index (NFI), Increment Fit Index (IFI), and Comparative Fit Index (CFI) are considered for the analysis from relative fit category.

Index	Values from AMOS output	Value for Good Fit
χ^2 value	$p\text{-value} = 0.016$	> 0.05
RMSEA	0.089	< 0.07
AGFI	0.916	> 0.90
NFI	0.914	> 0.90
IFI	0.948	> 0.90
CFI	0.947	> 0.90

Chi-square value is traditionally used to evaluate the overall fitness of model but it is sensitive to sample size. A larger sample size may lead to near rejection of the model (Mulaik et al, 1989). This tests the null hypothesis that the observed and the implied covariance matrixes are equal. With p-value (0.016) the model can be taken as reasonably fit.

RMSEA developed by Steiger and Lind (1980) tells model fitness with population covariance matrix. Till last century, a range of RMSEA between 0.05 to 0.10 was an indication of fair fit. However, recently an upper limit of 0.06 (Hu and Bentler, 1999) or according to Steiger (2007) it can be up to 0.07 for the model to be good fit. RMSEA value in the above mentioned model is a bit higher than 0.07 and that indicates the poor fit of the model.

AGFI is used as an alternative to the Chi-square (χ^2) test and gives the part of variance which is accounted for by the estimated covariance of the population (Hooper, Coughlan, & Mullen, 2008). AGFI is derived by adjusting Goodness of Fit (GFI) by its degrees of freedom. A well-fitting model should have its value 0.9 or more. Its value in the Table 2 is 0.916 indicating that the model is well fit.

NFI compares the Chi-square value of the model with that of model with null hypothesis. Bentler and Bonnet (1980) recommended 0.90 or more for a good fit. Bentler (1990) introduced CFI and 0.90 is taken as indicator good fit. CFI is widely used as a fit index as the effect of sample size is almost minimal. (Fan et al, 1999). IFI is the adjusted index of NFI for sample size and degrees of freedom (Bollen, K.A., 1989) and it is, therefore, more stable index in different sample sizes. Its value in the table above is more than minimum acceptable value 0.09.

5.4.2. Model Estimates:

Weights of Regression: (Group No. 1: Default model)

			Estimate*	S.E.	C.R.	P	Label
Accessibility	<---	Customer Satisfaction	0.739**				
Convenience	<---	Customer Satisfaction	0.654	.100	7.608	***	par_1
Efficiency	<---	Customer Satisfaction	0.778	.098	8.544	***	par_2
Responsiveness	<---	Customer Satisfaction	0.421	.088	5.020	***	par_3
Security Privacy	<---	Customer Satisfaction	0.567	.089	6.684	***	par_4
Reliability	<---	Customer Satisfaction	0.289	.072	3.460	***	par_5

* Standardized Regression Weights

** This regression weight was fixed at 1.000, not estimated.

The p-values of all standardized regressions weights are significant and support the goodness of the model mentioned above.

6. Conclusion:

All responses were categorized into three Categories-Low, Medium, and High. In general, the findings show more than 50 percent of ATM users showed high level of satisfaction in five of the six pre-selected dimensions of customer satisfaction with exception of reliability where in 47 percent showed their high level of satisfaction with 57 percent responded as medium level of satisfaction.

All the six dimensions show reasonable good satisfaction level, Security & Privacy being the top and Privacy ranks the last. Confirmatory model was used when applying structural equation modeling (SEM) model using standardized estimates of response variables and customer satisfaction as latent variable. Model fitness indices and model estimates show a collective good fit of the model. As it was evident from the other results, the relative contribution of reliability is the smallest ($\beta=0.289$).

Thus it is concluded that customer in Oman are satisfied with the ATMs and CDMs services being provided by all the Omani and foreign banks in the sultanate in general. The banking industry of Oman has to pay heed on improving the reliability of its ATM services as this dimension was the poorest among all the six dimensions and care has to be taken to be able to make the entire ATM service more reliable which in turn will increase the customer overall satisfaction level.

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