



The Influence of Service Quality factors on ATM usage

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ABSTRACT

This study aims at identifying the influence of service quality factors on ATM usage. It is very important to find the determinants of service quality that mostly influence on customer adoption in using ATM. This study provides insights to facilitate banks on which factors they should focus on mostly when providing awareness to customers in ATM usage. Although there were lots of research studies have been conducted in relation to the adoption of ATM usage, notably there had been limited research done in relation to Sri Lanka particularly to Batticaloa district.

The customers of the commercial banks have been considered for this study and data were collected from 158 customers in the Batticaloa district. Eight variables of Service quality factors such as Security, Ease to use, Convenience, Reliability, Fulfillment, Responsiveness, Location of ATM & User commission were considered in this study. Among eight service quality dimensions, easy to use, fulfillment and responsiveness have significant influence on ATM Usage, and among them fulfillment has the highest influence while responsiveness has the lowest influence.

Key Words: *Service quality Dimensions, Automated Teller Machine (ATM), Commercial banks.*

1. Background of the study

The main core of banking begun in ancient days by lending and accepting deposits and turned as financial services providers. The efficacy of the International trade improved rapidly soon after the expansion of notes and coins. However, the dealers challenged complications such as transportation and acceptability of exchanges. The linkage of the banks into this trading business



decreased the complications of operation of monies among the dealers and further worsens the efficiency and created a new era in trading.

At present the monetary service providers are measured as the mainstay of the International trade and play a major role in the economy of the country.

Banking sector shows a significant focus on new innovative equipment in order to challenge the digital banking services bring into line with financial assets. “Computer-generated banks or benchless banks” are a similarly ground breaking thought used to express banks that do not have a physical locality such as a branch, but offer facilities only via Internet and ATMs to deposit or withdraw funds”(Sahel & Tooraj, 2011).

Digitalized financial methods are more proper and most widespread among the banking customers all over the world. Digitalized banking has unlocked new window in the banking fields which creates it so quick and easier. Although digitalization system has made human lives easier, the number of ATM users have reduced for the past few years. With regard to the use of Internet banking by bank customers has been estimated that only about 1 per cent of the retail transactions are done over the Internet banking (Ernst and Young 1996). This study focuses on Automated Teller Machine usage of customers in the Batticaloa District. The aim of the study is to find out the causes behind the declining number of ATM users in Batticaloa district. The study anticipates service quality as influencing factors of ATM usage though there are many factors determined the usage of internet banking this study focuses on Service quality factors which consists of eight variables such as Security, Ease to use, Convenience, Reliability, Fulfillment, Responsiveness, Location of ATM & User commission.

According to internet banking system it exposes ‘ATM’ “as an electronic telecommunications system that provides linking to financial transactions of any financial organizations contained by a public range but with a support of a machine or any technological tools (E-banking, 2018). The appearance and expansion of information technology have transformed actions in business establishments and the way trades and clients relate in both developed and developing countries (Adelowo, 2015)



At present almost all the banks are providing ATM services to deliver best customer service. Hence in some cases customers facing difficulties in using ATMs and yet customers choose to stand in queues in bank to carry out their banking facilities such as balance inquires, paying of credit card bills , counter withdrawals, utility bills and to get the mobile cash over counters.

But to encourage the usage of ATMs and to cut the queues, some banks have placed limitations over the counter withdrawals, such as if customers withdraw below a certain amount across the counter they will be charged a commission. Though there are many facilities delivered through ATMs, it was recognized that there is a gap in using the ATM machines rather than standing in queues at the cash counters inside the bank. Hence, there is a requirement to find the object behind the deficiency in using ATM machines, mainly the factor influence the ATM usage; special reference to Batticaloa district. Therefore the scope of the research is to identify the determining factors of ATM usage in Batticaloa district.

2. Research problem

ATM services in Sri Lankan commercial banks have introduced lesser amount of tax and other facilities for the customers to reach out the ATMs. ATM withdrawal (at a daily basis) is permitted on an average of Rs.200,000/-, whereas cash withdrawal at the counter is authorized with a fine with an average amount equal or less than Rs.25/-. For the meantime customers given the chance to being engage in digital banking, safety environment, less time consuming, avoid standing in queues, real time transactions. Although customers were given the above facilities through ATM banking services, yet customers have the options to tradeoff between using the bank tellers and ATMs.

For some customers though the fine fee is relatively higher than to the ATMs, yet they prefer to go with the bank counters. Some customers complain that they are not aware about using the machine with pin codes. All the reasons stated above have generated the requirement to find out the reason behind public is reluctant to use the ATMs than the branch.

3 Research Question.

What are the service qualities dimensions influencing the ATM usage in Batticaloa District?



4 Objective of the study

To identify the influence of service quality dimensions on ATM usage in Batticaloa District.

5 Review of Literature

Ramas (1998) supports that, the survival of all the business sectors, including banks and other industries in the community depends on the understanding of the new procedures in engaging with business at a global level. This technological era has made the business segments compulsory in incorporating the technology in banking and management operations. Mahmood et.all (2014), Pavolou (2003) and Ramas (2000) research works are evident that, globally it is recognized the need to embrace the modern technology in order to build the effective global market along with the support of staffs, in which Automated Teller Machine is one of the modern technology equipment to make customers' lives easier while adapting the modern technological business strategies.

ATM is designed to dispense cash, transfer funds, accept deposit and checking account balance facilities are available, besides, an advanced technology ATM has the facility with a high protection and customer friendly functions (Okwute, 2007; Solomon and Ajagbe, 2014; Anup, 1997). The disadvantage is, the ATM cannot recognize the user without the PIN, even a thief could get the PIN and manipulate the transactions. Solomon and Ajagbe (2014), emphasized that, banks have created the network worldwide which allows to serve their clients with quality customer service across the world. The transactions and the network between banks at a global level is succeeded through ATM services, where partner banks allow to access their accounts of other banks (Anderson, 1993; Msheliza, 1996; Ajagbe, 2014).

ATMs and their Impact in Banking

Compared to man power ATMs are less costly, which leads banks to install it in a wide range (Melissa, 2006). Banks obtain a minimum cost for the customers as a service charge, and sometimes no charges applied for ATM withdrawals, in order to promote ATM usage rather than the customers forming long queues at the cash counter. For Melissa (2006), to design the ATM strategy bank should always prioritize the needs of their customers. It is a common empirical



evident that, technology reduces the paper work and allows access customers to full fill their needs within a short span of time. Generally, banks are capable of processing large number of transactions, which reduces the costs for the transactions due to economies of scale. Economies of scale is known as, a proportionate saving from the costs gained by the increased production.

An archival research conducted by Batiz-Lazo and Barrie (2005), disclosed on the impact of the ATM in British Retail Banking. As we all are aware, originally ATMs were innovated by the British and the manufactures of US (e.g., IBM and NCR) and German (e.g., Siemens) initiated the leading and today ATM has become a universally accepted technology. Historical period is an empirical evidence for us to learn on the progression of banks adopting ATMs. It shows how banks implemented on-line, real-time computing for all the inclusive branches in the banking network and to emphasis the importance of network outwardness. ATM considered as the technology which has made a shift in the banking industry when comes to retail finance. It has brought a shift in banking strategy where finance industry found competition from the potential resources of competitive advantage to minimum requirement of competitive advantage.

Service Quality Dimensions of Automated Teller Machines

Customer adoption of Automated Teller Machines can be defined as the interests, the degree of comfortability or the eagerness of customers to use the Automated Teller Machines. First of all, it is a common understanding that, Automated Teller Machines are technology based equipment which involves a lot of technical functions, which may or not be familiar to all the customers who ever try to use it.

Many studies have been conducted on ATM adoption throughout the last years and many are still going on. During the 1980s, survey conducted by Stanely and Moschis (1983) disclosed that the location of the ATM is the major influential factor in using the ATM. Today, this survey results are becoming less effective as ATM booths increased at every nook and corner. According to archival research study of Batiz-Lazo and Barries, the influence of Information Technology in banking industry has lowered down the operational expenditures during the 90s period, along with a higher revenue (transactions increased). Their study was positive about ATM usage at



banks, and the empirical evidence proved that the banks are highly benefited by the adoption of ATMs.

Di Angeli et.al (2002) has analyzed the usage of technology used from different cultural backgrounds. Her research concluded with two sides to it, that unlike the research findings which determined the ATM usage in Europe and South America, the fundamental factors behind the limited ATM usage are traced as feelings of inadequacy, preference for human contact, lack of necessity to use ATM and safety purposes. On the other hand, the people who used ATM, they had a necessity to use it, easy to access, safety, and showed positive attitude towards using ATM. Both negative and positive responds from the customers are displayed. This difference was found due to the cultural contexts. According to Di Angeli's research, as to Indian context incorporates different cultural values the usage of ATM depends on the context or social structure. For instance, the feeling of inadequacy is explained by the social status, most of the Indians didn't hesitate on explaining the idea of standing in long ques to complete their tasks despite the waste of time. Therefore, according to Di Angeli's research, contextual background makes a difference in customer adoption of ATM. Though customer adoption is influenced by the cultural context depends on the country's norms and customs, technology still plays a vital role in all forms of life. Further, technology brings a gap between the younger and older generation in using the technological devices, which has not given significance in explaining the customer adoption of ATM.

Besides, Lee (2000) on his research on electronic banking technologies, including ATMs, debit cards, smart cards, direct deposit, and direct payment by using the 1995 survey of Consumer Finances, concluded that education and youngsters are more eager to adopt technologies in banking. In other words, their research is an evident that, education and age has influenced the ATM adoption despite of context or the cultural significance. However, apart from age and education there are other factors which affect the use of ATM facilities that are not discussed in their research work. For instance, gender, location and income level do make a significant change in ATM adoption among the customers. At the same time, this paper well explains that



education and younger generation, but there are gaps in explaining the reason behind their conclusion beyond the empirical evidence.

Antonella et al (2004), points out several basic causes for non-use of ATMs. Namely, not having the need to acquire services from the bank beyond office hours, not prioritizing time saving, shortage in personal income, safety concerns (stealing or scared) and having a limit to spend, this increases the fear of having an ATM card which grows a fear among the customers of the ATM getting stacked or withdrawing too much money anytime anywhere.

In certain instances, there are situations where the special need individuals find the ATM usage difficult. In specific, people who are in capable of handling the ATMs as other normal people, have to use wheel chairs, blind stick, ear phones and other equipment depending on their disability. Mentioning these special need people's comfort is quite challenging when it comes to use the ATM along with all the public. Though there are certain laws implemented to treat all people the same regardless gender or the disability yet is it plausible to incorporate both the crowd at the single line, or each branch should carry a separate line for those special need people. On the other hand, even the ATMs were designed accordingly, is our society ready to welcome the special need people without hesitation, this area is still debatable where the author as well has not broadly discussed it in the paper.

Odinga (2005) recognizes that significant knowledge about ATM as one of the determining factors of ATM usage. In the research 70% have agreed and positive about the statement. Next, about security, most of the clients were afraid of processing the transactions through internet. The author has used the word 'Technophobia', which stands to explain being afraid to use the technology. The study finds that, there is a hesitancy to avoid this technophobia. Odinga, suggests more research possibilities on to overcome the psychological distance from technology. Though he has mentioned the advantages and the importance of using the technology in banking or other financial transactional services, the study seems incomplete without the explanation compared to generational gap and the technophobia effect. In other words, socio demographic as well as service quality dimensions, indirectly influence the public for being reluctant to use



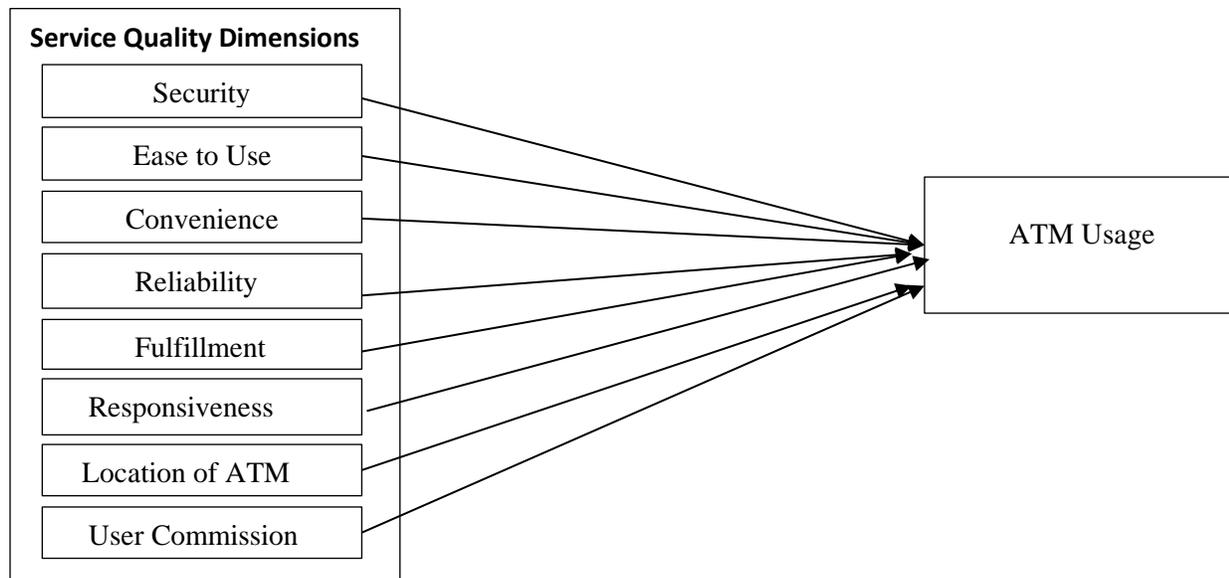
technology, this has a significant impact on ATM usage; which has not given a central focus to explain the lack of participation in ATM usage.

Antonella et al (2004) while explaining the reasons behind lack of ATM usage, security becomes an influential factor. Generally, individuals have a tendency to be comfortable with human interaction rather than a robot or a machine, where people are more convenient in reducing technology due to they are scared of technology error than human errors. Onyango (2003) through the empirical evidence it shows that, 49.3% gave their consent on cannot trust the ATM since it is a technological machine out of it 15.5% were confident that, ATM's reliability is doubtful. This issue is common among the older generation, where they are unaware about the efficiency of the technology use, which results of lack of confidence in a public sphere in front of ATMs. Though this study is clear on elderly sector, but not clear on defending the participants age who ever among the empirical evidence.

Adding to Antoella's point, Ndegwa (2003) and Onyango (2003) as well confronts about the security fears which influence the ATM usage. While Ndegwa discusses on having security cameras in the ATM booths, to tighten the security system in return the ATM usage would increase. According to Ndegwa, Nairobi female customers who use ATMs, were unsafe. In the early ATM systems, security was understood with a different perspective, where the ATMs were secured from physical attacks, during the evolution period, the idea of security took a different paradigm shift. Critics have argued that, customer security while using ATM has been given less priority by the banking administration. Kandie (2003), shared the idea behind safety of the ATM users and the opinion about the quality service provided. In other words, if and only if the safety is ensured, customers will be given the freedom to enjoy the services of ATM facilities without any hesitant which determines the quality of service. PIN code also is another form of insecurity that customers carry in their minds, that limitation for regular withdrawals highly challenges a situation where the PIN code is lost or stolen by a thief.

6. Conceptual framework of the research

The below described conceptual frame work shows the correlation between the factors involved in this study. This study established a conceptual framework through an empirical study and intensive literature review to guide this study.



ATM Usage: DeLone and McLean (2003) noted that ATM usage has to do with the extent, nature, appropriateness, and quality of a technology’s use in terms of measuring the extent to which the technology is being used for the proposed function. In this study, ATM usage is conceptualized as the degree and manner in which ATM users use the machine in terms of consistency of use, purpose of use, time of use, and continuity of use.

Service Quality Dimensions: This describes Customers’ experience with the set of features refers to the usage ATM. It is measured by reliability, ease of use, convenience, security, fulfilment, responsiveness, Location and User Commission.

7 Research Design

7.1. Sampling Design

This comprises the population, sampling procedure and sample calculation system used throughout the sample design stage.



7.2. Population

The target group will be the ATM users of commercial banks in Batticaloa district. According to the Google Map there are 72 ATMs including Licensed Commercial Banks, Licensed Specialized Banks and Financial Companies. Out of 72 there are 68 ATMs attached to commercial banks in Batticaloa district. The customers of the commercial banks have been considered for this study and data were collected from 158 customers in the Batticaloa district.

7.3 Primary Data Collection

Primary data collected through the survey of structured questionnaire among the customers in the Batticaloa District. The statements in the questionnaire focused on collecting information regarding eight independent variables namely security, ease to use, convenience, reliability, fulfillment, responsiveness, location of ATM, user Commission and ATM usage as dependent variable.

7.4 Data presentation and analysis

Primary data composed been prepared and analyzed using Statistical Package for Social Science' (SPSS). The objective of this study is to ascertain the influence of service quality dimensions (reliability, convenience, ease of use, security, fulfillment, responsiveness, and Location of ATM and User commission) on ATM usage in Batticaloa District. Multiple regression was performed to determine the weight that each of the service quality dimensions contributes to the prediction of ATM usage.

Socio-Demographic Profile of Respondents

Frequency Analysis of Gender

The below table carries the frequency and percentage according to the data collected

Gender				
	Frequency	Percent	Valid Percent	Cumulative Percent



Gender	Male	96	60.8	60.8	60.8
	Female	62	39.2	39.2	100.0
	Total	158	100.0	100.0	

Table 1 - Frequency and Percentage distribution according to Gender

The majority of the sample is Male the percentage is 60.8% and Female is 39.2%.

Frequency Analysis of Age

The below table carries the frequency and percentage according to the data collected

		Age			
		Frequency	Percent	Valid Percent	Cumulative Percent
Age	Below 21	3	1.9	1.9	1.9
	21-30	45	28.5	28.5	30.4
	31-40	55	34.8	34.8	65.2
	41-50	34	21.5	21.5	86.7
	51 and above	21	13.3	13.3	100.0
	Total	158	100.0	100.0	

Table 2 - Frequency and Percentage distribution according to age

According to the above table 34.8% categorized under 31-40 years of age, 28.5% categorized under 21-30 years of age, under 41-50 years age carries 21.5%, under 51 and above carries 13.3% and below 21 only 1.9% has been categorized.

Frequency Analysis of Education

Education				
	Frequency	Percent	Valid Percent	Cumulative Percent



No formal Education	7	4.4	4.4	4.4
GCE O/L	14	8.9	8.9	13.3
GCE A/L	62	39.2	39.2	52.5
Graduate	60	38.0	38.0	90.5
Postgraduate	15	9.5	9.5	100.0
Total	158	100.0	100.0	

Table 3 - Frequency and Percentage distribution according to Education

As per the data collected 4.4% of the data has no formal education, 8.9% of customers have studied up to GCE O/L, GCE A/L is categorized as 39.2% also graduated are 38.0% which has a minute differences and post graduate are 9.5%.

Frequency analysis of Income

	Income			
	Frequency	Percent	Valid Percent	Cumulative Percent
Below Rs.25,000/-	34	21.5	21.5	21.5
Rs.25,00/- to Rs.50,000/-	41	25.9	25.9	47.5
Rs.50,001/- to Rs.100,000/-	55	34.8	34.8	82.3
Income Rs.100,001/- to Rs.200,000/-	18	11.4	11.4	93.7
Rs.200,001/- and above	10	6.3	6.3	100.0
Total	158	100.0	100.0	

Table 4 - Frequency and Percentage distribution according to Income

As per the above table Income between Rs.50,001/- to Rs.100,000/- has the highest percentage 34.8%, Income between Rs.25,000/- to Rs.50,000/- is 25.9% and Below 25,000/- is 21.5% Also the percentage of Rs.100,001/- to Rs.200,000/- is 11.4% and Rs.200,000/- and above is 6.3% collected according to the research.

Frequency Analysis of Occupation

Occupation



	Frequency	Percent	Valid Percent	Cumulative Percent
Government Servant	50	31.6	31.6	31.6
Private Sector	75	47.5	47.5	79.1
Occupation Self-Employed	24	15.2	15.2	94.3
Student	5	3.2	3.2	97.5
Other	4	2.5	2.5	100.0
Total	158	100.0	100.0	

Table 5 - Frequency and Percentage distribution according to Occupation

As per the collected data private sector customers are the majority of 47.5% , Government sector carries 31.6%, self employed is 15.2% and students and others are accordingly 3.2% and 2.5%.

The socio-demographic characteristics of the respondents are summarized in Table 20

	Variable	Frequency	Percentage (%)
Gender	Male	96	60.8
	Female	62	39.2
	Total	158	100
Age	Below 21	3	1.9
	21-30	45	28.5
	31-40	55	34.8
	41-50	34	21.5
	51 and above	21	13.3
	Total	158	100
Level of Education	No formal Education	7	4.4
	GCE O/L	14	8.9
	GCE A/L	62	39.2
	Graduate	60	38.0
	Postgraduate	15	9.5



	Total	158	100
Monthly Income/Allowance	Below Rs.25,000/-	34	21.5
	Rs.25,001/- to Rs.50,000/-	41	25.9
	Rs.50,001/-to Rs.100,000/-	55	34.8
	Rs.100,001/- to Rs.200,000/-	18	11.4
	Rs.200,001 and above	10	6.3
	Total	158	100
Nature of Occupation	Government Servant	50	31.6
	Private sector	75	47.5
	Self-Employed	24	15.2
	Student	5	3.2
	Others	4	2.5
	Total	158	100

Source: field survey (2020)

Table 6 - Socio-demographic characteristics of respondents.

As shown in Table 20, the sample consists of both genders, all age-groups, income and occupation and level of education. Across the respondents the diversity can be considered insightful of the socio-demographic characteristics employed in this study. Therefore, the data collected can be said to be reliable and balanced for the purpose of this study.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.708 ^a	.501	.474	.52066

a. Predictors: (Constant), user commission, Convenience, Location, security, fulfilment, Responsiveness, Avg_rel, Avg_Ease

Table 7 – Model summary of Service quality dimensions and ATM Usage



ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	40.539	8	5.067	18.693	.000 ^b
	Residual	40.393	149	.271		
	Total	80.932	157			

a. Dependent Variable: ATM Usage

b. Predictors: (Constant), user commission, Convenience, Location, security, fulfilment, Responsiveness, Avg_rel, Avg_Ease

Table 8 – ANOVA Analysis for Service quality dimensions and ATM Usage

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.547	.359		1.524	.130
	Avg_rel	.021	.091	.020	.225	.822
	Convenience	.005	.095	.005	.056	.956
	Avg_Ease	.342	.103	.333	3.333	.001
	security	.085	.080	.084	1.062	.290
	fulfilment	.392	.086	.382	4.542	.000
	Responsiveness	.273	.090	.254	3.047	.003
	Location	.046	.071	.051	.641	.522
	user commission	.064	.035	.111	1.807	.073

a. Dependent Variable: ATM Usage

Table 9 – Coefficient of Service quality dimensions and ATM Usage

Multiple regression results in Table 32 show goodness of fit of the model because the F-value ($F = 18.693$, $p = 0.000 < 0.05$) is statistically significant at 5 percent level of significance. It indicates a statistically significant relationship between service quality dimensions and ATM usage. This means that ease of use, fulfillment, and responsiveness determine ATM usage. The



R-Square value (coefficient of determination) of 0.501 indicates that service quality dimensions explain 50.0% of the variation in ATM usage.

Results in Table 33 also reveal that Ease of Use ($B = 0.342$, $t = 3.333$, $p = 0.001 < 0.05$), fulfillment ($B=0.392$, $t=4.542$, $p = 0.000 < 0.05$) and responsiveness ($B = 0.273$, $t = 3.047$, $p = 0.003 < 0.05$) have statistically significant influence on ATM usage,

While reliability ($B = 0.021$, $t = 0.225$, $p = 0.822 > 0.05$), convenience ($B = 0.005$, $t = 0.056$, $p = 0.956 > 0.05$), security ($B = 0.085$, $t = 1.062$, $p = 0.290 > 0.05$), location of ATM ($B = 0.046$, $t = -0.641$, $p = 0.522 > 0.05$), and user Commission ($B = 0.064$, $t = 1.807$, $p = 0.073 > 0.05$) have no statistically significant influence on ATM usage.

It describes that ease of use, fulfillment and responsiveness has a positive relationship with ATM usage. This reveals at the higher the level of ease of use, fulfillment and responsiveness meet the needs of a customer, the higher the ATM usage

Among eight service quality dimensions easy to use, fulfillment & responsiveness have significant influence on ATM Usage and among them fulfillment has the highest influence while responsiveness has the lowest influence.

8. Conclusions and Recommendation

The objective was to determine the effect of service quality dimensions (reliability, convenience, ease of use, security, fulfillment, responsiveness, Location of ATM and User Commission) on ATM usage in Batticaloa District. The results of this research reveal that, three of the service quality dimensions have a significantly positive influence on ATM usage. In order of prominence, the dimensions are Fulfillment, Ease of Use and Responsiveness. Differing to former studies (Ayimey et al., 2012; Abdulrahman and Premalatha, 2014) that ease of use is the most essential service quality dimension influencing ATM usage, this study found Fulfillment to be the most important service quality dimension influencing ATM usage. The study specifies that the quality of bank notes, SMS alerts on transactions, providing receipts after transactions, providing clear instructions about usage of ATM and replacing if lost card also returning of jammed cards which increase the waiting time at ATM points influence ATM usage more



positively than other service quality dimension. Commonly, the conclusions seem to recommend that when clients trust that ATM services are Fulfill the required service, Ease of Use & responsively meet the needs of consumers they tend to use ATMs more than others who ponder otherwise. This indicates that upgrading in these service quality dimensions of ATM will lead to an excellence in ATM usage.

The factors of service quality were found to influence ATM usage. Therefore, an improvement in service quality will have a positive effect on ATM usage in terms of how often it is used, the banking transactions it is used for, and commitment towards its use. Banks need to see ATM service quality from the customer's perspective so as to meet or exceed their expectations. The findings from this study can be used by bank managers to better understand the sources of customers' perceived service quality and address them appropriately. The findings of this study also suggest that there is need to develop customer-related strategies that can fulfill customer requirements according to their expectations so as to increase customers' perceptions of ATM service quality and usage.

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