

Measuring Mediating Role of Customer Satisfaction in Determining ATM Service Quality and Customer Retention in the Banking Sector of Pakistan

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Abstract

This study endeavors to investigate Bank ATM users' views towards perceived service quality and their retention. The mediating role of customer satisfaction was also explored. The ranking of ATM services was also measured. Cross-sectional research where 378 ATM users of three public sector universities of the capital city of Islamabad, Pakistan participated. Self-administered questionnaires were used for data collection. For mediation Regression analysis in SPSS was used. Results show that Service quality attributes contribute positively and significantly towards customer retention and customer satisfaction. Partial mediation was found in the relationship between service quality attributes and customer retention. The result can be useful for banks in observing and enhancing ATM service quality.

Keywords: Service quality, Customer Retention, Customer Satisfaction, Banks, ATM, Pakistan.

Introduction

Service quality is considered a basic requirement to satisfy customers. Further, it has a long-lasting influence on customer's perceptions and expectations. Service quality is the perceptions of customers, they compare their expectations and actual service delivery when they receive services from the company (Oliver, 1997). The service quality will be excellent if the perceptions are higher than the expectations against delivered services. It will be marked as good if perceptions are equal to the expectations. Meanwhile, service quality will be considered bad if perceptions do not match the expectations of the customer (Suleiman & Yasir, 2022).

There is a debate on satisfaction and service quality in the literature that confirms that good service quality indicates higher customer satisfaction (PJ, *et al.*, 2023). The customer's satisfaction can also be deduced that customer satisfaction and service quality are different terms but they are related to each other (Stafford, *et al.*, 1998). It also hypothesized that service quality is the predecessor to customer satisfaction (Shekarchizadeh, *et al.*, 2011). Service quality may also be explained as the satisfaction in general related to one particular transaction according to the expectations of the customer at a particular time (Spreng, *et al.*, 1996). Service quality is considered the most harmonious to measure the attitude in the long run. It is not

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satisfactory to depend on a single definition of service quality, as discussed in the literature. Service quality can be measured with different natures of proxies: as Juran, (1974) measured it by introducing fitness for use, Crosby, (1979) explained that this is related to the requirements of the customers, and it may be the ability of a product or service which satisfy needs of customers (Deming, 1986).

As time passes, the customer's demands are increasing. Information and Communication Technology (ICT) aided the process that met the expectations of the customer by helping them in their business (Hinson & Abor, 2004). In the current era, technology is considered the largest force, and vivacious change will help the process of developing new products, more opportunities in the service market, and introduce advanced information processes in terms of business that help them to manage different processes i.e. controlling, planning, and coordination in the company (Liao & Cheung, 2002). Now each bank is offering Internet banking services, both in developed and developing countries (Bawumia, 2007). For example, they are offering online transaction services, communicating with customers with the help of electronic means, providing e-bank statements of their customers, and many more (Bawumia, 2007).

Globalization is the broader term that influences the modern banking business process (Yuzvovich, et al., 2016). Financial market liberalization has an expression and causes an impact to enlarge the competition. Banks provide cheaper and new services that help to survive in the digital market under a competitive environment. There is a need to define the competitive authority of a bank that helps to examine the competency of the bank that can be confirmed by customer satisfaction (Jawaid, *et al.*, 2021). However new capabilities for competitive success are most important in the current technological era that is related to the management of good customer relationships, ongoing and useful product innovation, and information technology. The most important goal of the service sector from the last few decades is to improve the service quality to link good service quality with customer satisfaction (PJ, *et al.*, 2023). Meanwhile, it is confirmed that where there is no segregation of service and product, they offer this to the customers. Improving the quality of services is another source to uphold or improve the satisfaction level of the customers (Abdullah & Sufi, 2023). Banks need to sustain the customer satisfaction level for their survival since banks can linger in business without loyal customers.

The electronic banking system comprises three different branches which are: ATM banking system, mobile banking system, and online banking (Ibrahim, *et al.*, 2006). There is a need to properly manage the possible ways of service quality that may help the customers regulate their business activities in the long run. ATM banking delivers financial matter services i.e. credit cards, transfer of funds, cash withdrawal, payments of utility bills, and many more to their customers who are actively running their businesses (Pohwa & Saxena, 2011).

This study discusses a clearer picture of self-service technology and the role of electronic banks in Pakistan. The strong focus of banks towards profitability through

e-banking systems is not limited to acquiring new customers or retaining existing customers but is also related to the cost acquisition of online bank services over the traditional offline business. It suggested that technology affects the thoughts of the customer in several ways which impact the service quality (Joseph, *et al.*, 1999).

Customer retention has a positive and significant impact on customer satisfaction. This is true only if customers are satisfied, they will retain the same organization. On the other hand, if customers are not satisfied this implies that currently they are receiving services from a specific organization and will no longer remain with the same organization because provided services are not up to the marks of their satisfaction level (Wu & Wang, 2007). There are several issues that customers sometimes face; link down, cash not available, charging, and even sometimes service of restoration is poor. Information and Communication Technology (ICT) and electronic transaction growth are rapidly emerging services in Pakistan, and further the customers are adopting it with great attention. Firstly, in Pakistan, the State Bank of Pakistan (SBP) introduced ATMs in 1999, and now all banks are working with this facility. The banks are also offering debit cards, ATM cards, smart cards, credit cards, and cash withdrawal facilities by just scanning a thumb and many more online services.

The E-commerce sector provides a wider range of usage of the internet and simplifies rapidly increasing business operations which is considered a fruitful development in the field of e-commerce that helps to improve the customer's satisfaction level by providing such services (Kardaras & Papathanassiou, 2001). The strategic resources to attain efficiency in technology help the productivity, profitability, and manage many other operations in banks. But customer's expectation is different in conducting their business activities and they expect to perform their business transactions anytime and anywhere. To satisfy this part of the customer's satisfaction, banks increase the use of technology, to meet their satisfaction level. Customer satisfaction, retention, and ATM service quality are the most neglected indicators in previous studies (Narteh, 2013; Khan, 2010). As commercial banks are providing e-services to facilitate their customer by providing better services (Parasuraman & Zinkhan, 2002).

Research Questions

RQ1: Does ATM service quality affect the satisfaction and retention of the customers in Pakistan?

RQ2: Does customer satisfaction play a mediator role between aspects of ATM service quality and customer retention in Pakistan?

RQ3: Does customer satisfaction affect customer retention?

Literature Review

Service Quality

Good quality is considered a key to success for any industry to improve the expectation level of their customers and is considered the most important factor for a successful business. Literature does not rely on a single definition of service quality

(Reid & Sanders, 2010). Different researchers define the definition of service quality in multiple ways: Juran, (1974) defined it as the fitness of use for customers while others define it as the point that meets the needs of customers that satisfy the customer or the standard of the performance. To get a competitive advantage, service quality is considered the most important and dynamic strategy for a well-improved and well-measured performance of the company (Lee & Yom, 2007). SERVQUAL scale was developed by Parasuraman, *et al.*, (1985) to measure service quality based on the concept that service quality is the difference between perceived and expected service quality. The Banking sector needs more attention to loyalty and prediction of the customers (Jabnoun & Al Tamimi, 2003). Several researchers developed a perspective of service quality and suggested service quality can only be perceived by customers (Zeithaml, 2004, Ramsaran-Fowdar, 2007; Chang & Chen, 2008). In another research point, service quality is an acknowledgment and for the customers they experienced by received services (Parasuraman, *et al.*, 1990). This is also recommended that service quality not only consists of the final production process, it is also involved in the production process, fabrication, and delivery service process (Kumbhar, 2011; Anyadighibe, *et al.*, 2022). This is very important to maintain the service quality at each step in the production of goods or related to providing services.

ATM Perceived Service Quality Aspects

Perception is about the state of mind, logic, or sense that a customer sets against any phenomenon. Literature supports the argument that service quality has many dimensions, doesn't matter whether services are provided by electric or traditional channels (Parasuraman, *et al.*, 1988; Nusair & Kandampully, 2008; Shachaf, *et al.*, 2008; Stiakakis & Georgiadis, 2009; Syahrizal, *et al.*, 2022). Satisfaction of the customers, based on service quality, is determined by reliability, ease of use, responsiveness, accuracy, fulfillment, convenience, and security (Narteh, 2013). Reliability is considered as the very important forecaster to measure service quality rated by the customer (Wolfenbarger, *et al.*, 2003). Reliability is considered the most feasible indicator to measure service quality which is related to the past experiences of the customer (Nguyen & Leblanc, 2001). Easy use also influences customer satisfaction which is considered as a dimension to measure service quality (Davis, 1989). Satisfaction increases customer attention which is related to the relations between parties (Eriksson, *et al.*, 2000). Because it brings dramatic change by building and maintaining close relationships with their customers (Mols, 2000).

Research Gaps

This study is trying to fill the research gap by examining customers' behavior and their adoption of ATMs as a means of e-transaction. Customer behavior and adoption of ATMs for e-transaction is hardly found in the literature, in the case of Pakistan. The service quality during ATM services acts like a predecessor to customer retention that plays a mediator role in customer satisfaction. It is being observed that the combined impact of ATM service quality, customer satisfaction, and customer retention is missing in the explored literature (Khan, 2010; Narteh, 2013).

Framework

The base model measured the perception and expectation of the customers to check the quality of the provided services. Electronic service quality is the key factor in differentiating the offered services and building competitive advantage, as this is comparatively low in online environments in terms of other services (Santos, 2003; Bauer, *et al.*, 2005). Service quality is known as the multidimensional indicator and consists of 22 attributes (Parasuraman, *et al.*, 1988; Parasuraman, *et al.*, 1985). In another study only 7 dimensions were used to measure the service quality against provided ATM services that consist of the variables: ease to use, responsibility, reliability, fulfillment, convenience, accuracy, and security that act as an antecedent to the customer's retention (Narteh, 2013). Both retention and ATM service quality are based on customer satisfaction.

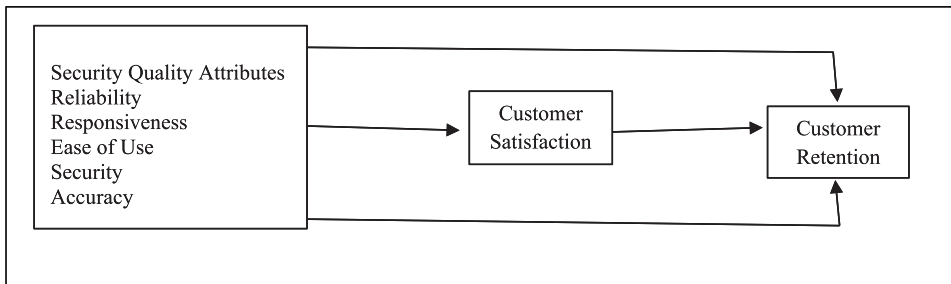


Figure 1. Theoretical Framework

Hypotheses

- H1: ATM service quality and customer retention show a significant relationship.
- H2: ATM service quality and customer satisfaction show a significant relationship.
- H3: Customer retention and customer satisfaction show significant relationships.
- H4: Customer satisfaction plays a mediator role between the service quality of ATM and customer retention.

Research Methodology

The main concern of this research work is to examine the role of customer satisfaction in the banking industry. The reason for selecting this industry is to confirm the customer satisfaction level and retention of those who use ATM services. The population of this study consists of the students and all staff members from selected three universities (CIIT Islamabad, International Islamic University (IIUI), and Quaid-e-Azam University) in Pakistan. Based on the guidelines provided by Nunnally (1978), the minimum sample size is 260, and the studied data consisted of 378 ATM users. Non-probability convenience sampling technique was used as this technique was most suitable under the circumstances of cost and time constraints. Banks also do not share details of their customers so having a population frame is not possible.

Demographics of the Participants

Out of 378 respondents, gender-wise there were 261 (69%) Males, and 117 (31%) females. Age group wise majority of respondents fall in the group of 21-30 years (69.8%), followed by 31-40 years (12.2%) and 41-50 years (8.2%). Education wise majority of respondents were intermediate (47.1%), followed by postgraduate and graduate (20% each). Occupation-wise, the majority of respondents were enrolled students (66%), government employees (19.3%), and private employees (9.3%).

Research Findings

Reliability results are shown in Table 2 which shows all the constructed variables yielding a good reliable score as the value of α against each variable is greater than 0.71 (Bland & Altman, 1997). To test the common method variance, this study used a human's single factor test with an addition of all variables into a single factor and constraints of no retention. This study confirmed that the new common latent factors explain the variance with 41.95 % which is lower than the 50% and confirmed no common method of variance (Podsakoff, *et al.*, 2003). A strong correlation was observed between service quality attributes with customer satisfaction and customer retention. This high correlation was checked through Multicollinearity in Regression and was within acceptable limits i.e. $TV < 1$ and $VAF < 10$.

Table 2: Correlation coefficient, reliability, mean, and standard deviation results

	Variable	M	SD	α	1	2	3
1	Service Quality Attributes	3.85	0.618	0.911	1		
2	Customer Satisfaction	3.91	0.718	0.761	0.855**	1	
3	Customer Retention	3.96	0.660	0.724	0.876**	0.780**	1

Item-Wise Descriptive Results

Table 3 (see appendix) depicts item-wise descriptive results of all variables. Among service attributes, reliability has the highest mean score 3.94 (SD 0.702), followed by Accuracy (M 3.89, SD 0.713), Security (M 3.85, SD 0.753), Responsiveness (M 3.79, SD 0.784), and Ease of Use (M 3.77, SD 0.787) showing highest trust of respondents on ATM reliability.

Regression Results

Effect of service quality attributes on customer satisfaction and/between customer retention

Linear regression used three stages to test the hypothesis that showed the impact of one variable on another, as per the hypotheses of this study. In Table 4, Model-1 explains the individual effect of service quality attributes on customer retention (IV-DV) ($\beta=0.876$, $t=35.183$, $p<0.001$). Model-2 (IV-MD) shows the significant and positive individual effect of service quality attributes on customer satisfaction ($\beta=0.855$, $t=31.982$, $p<0.001$). Model 3 shows the relationship between customer satisfaction and customer retention (MV-DV) ($\beta=0.780$, $t=24.178$, $p<0.001$). Hence the mentioned results provide support for the hypotheses from H1 to H3.

Mediating Effect of service quality attributes between customer satisfaction and customer retention

Model-4 in Table 4 explains the mediating effect of customer satisfaction between service quality attributes and customer retention. Results suggest that customer satisfaction partially mediates the relationship between service quality attributes and customer retention ($\beta=-0.116$, $t=2.434$, $p<0.05$) thus supporting H4.

Table 4: Regression Results

	<i>Model-1 IV-DV</i>		<i>Model-2 IV-MV</i>		<i>Model-3 MV-DV</i>		<i>Model-4 (IV+MV-DV)</i>	
	<i>B</i>	t-value	<i>B</i>	t-value	β	t-value	<i>B</i>	t-value
Service Quality Attributes	0.876***	35.183	0.855***	31.982	0.780** *	24.178	0.777***	16.279
Customer Satisfaction							0.116*	2.434
F	1237.863***		1022.819***		584.571***		630.0***	
R ²	0.767		0.731		0.609		0.771	
Adjusted R ²	0.766		0.730		0.608		0.769	
Durbin-Watson	1.300		2.220		1.894		1.360	

Notes: * $p<0.05$; ** $p<0.01$; *** $p<0.001$

IV= Service Quality Attributes

MV: Customer Satisfaction

DV: Customer Retention

Ranking of ATM Services

Table 5 (see appendix) depicts the mean scores for ranking the services in both ascending and descending order. “ATM service provider always provides the facility of Power Back up” got the highest mean score (3.95) affirming users' highest priority and satisfaction as banks provide power backup for ATMs in continuous electricity load shedding. The second and third highest mean scores were related to ATMs providing accurate records and functioning all the time (3.94) followed by ATMs providing consistent services (3.92).

In ascending scores which highlight scores from the selected variables which comparatively failed to provide service properly and caused dissatisfaction. “ATM contact person is available to address problems” got the lowest score (3.73) followed by “Breakdown of ATMs are fixed promptly” (3.58) showing the unavailability of ATM contact person to address problems the majority of which are related to ATM breakdown. Other similar service-related issues were related to ATM language which

is in English and insufficient instructions for usage causing new or less educated people to find it difficult to understand and operate.

Discussion

This study has measured the perceptions of customers who are ATM users regarding its service quality, by measuring the variables: ease to use, reliability, responsiveness, accuracy, security, and how these perceptions help to build the customer's satisfaction and retention. Data was collected from three universities to measure the perceptions of customers.

This study confirmed that the dimensions of service quality, whether it is a traditional or electronic channel, consist of multi-dimensional indicators as their dimensions are spread, based on the nature of satisfaction of the customers (Parasuraman, *et al.*, 2005; Khan, 2010). ATM users expect ATM service is reliable. Reliability is not only about the all functions performed by the ATM and the delivery that it promised to give, but it also customers believe that their ATM service provider is reliable and the network will be there in transaction time which will lead to trust in the ATM service provider. This frustrates the customers when they visit an ATM and the machine is out of service.

The location of the ATM is another concern of the customer's satisfaction. It has been observed that most ATMs are located on the premises of the banks and off-site such as; shopping malls, university campuses, market centers, and petrol stations. More sites and easy access to ATMs reduce the waiting time to complete a transaction. Banks have the credibility to spread several ATM sites to make the service easier for the easy access of customers. Still, banks are unable to satisfy their customers, to use ATMs. Dimensions of responsiveness measured the strategies of service recovery of banks in terms of ATM usage, which was also considered an important quality dimension.

Further, this study confirmed that ease of use is also the most significant indicator to measure ATM service quality. Due to advancements in technology, this is very important to make sure customers have easy access to make their transaction complete in a very short time. Easy access is not only related to the shorter distance, it is also related to the easy use of the ATM, easy language, and user-friendly machine that helps to improve the customer's experience. The results of this study are consistent with the reviewed literature that easy access to ATMs improves the satisfaction level of customers (Fassnacht & Koese; 2006; Gounaris & Koritos; 2008; Chong, *et al.* 2011).

It is also observed that most of the ATMs are 24 hours guarded by bank security guards and also protected by CCTV cameras to enhance the confidence level of the customer to make their transactions in a secure environment. This is the reason that the security dimension is very important. Such securities increase the confidence level of ATM users and they prefer this method under such security facilities and select the option of bank as they consider that this is the most reliable way to keep their money in the bank and can withdraw 24 hours and 7 days (Gray, 1977).

Conclusion

This study tried to contribute to various dimensions of service quality to satisfy the customers. Results concluded that service quality attributes were found to be a good predictor of overall satisfaction in e-banking and customer retention. Banks needed to focus on all necessary aspects regarding transaction security and privacy of the customers, meanwhile, efficient operations of ATMs fixed to provide e-service to customers. They have to augment new offers and diversify them with ATM usage to create strong and sustainable relations with the customers.

Managerial Implications

The bank managers should focus on the smooth service of ATMs, this will reduce crowded environments within the branch as ATMs are considered it the most important factor of customer retention and mostly use instruments to not only receive cash but also for many other e-services regarding transactions. This research also highlighted the ranking of services that will be beneficial for managers in addressing customer complaints.

Limitations & Direction for Future Studies

The current study employed a convenience sampling technique as the banks refused to share information about customers' profiles because of their privacy policies. So, generalizability may be an issue if a similar study is carried out in other cities of Pakistan. Future studies should cover bank branches in other cities (both urban and rural) and should include more service quality-related dimensions for in-depth analysis.

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Appendix

Table I: Demographic Details

Demographics	<i>(n = 378)</i>	
	<i>f</i>	<i>%</i>
<i>Gender</i>		
Male	261	69.0
Female	117	31.0
<i>Age</i>		
Less than 20 years	29	7.7
21-30 years	264	69.8
31-40 years	46	12.2
41-50 years	31	8.2
Above 50 years	8	2.1
<i>Education</i>		
Less than or equal to Matric	12	3.2
Intermediate	178	47.1
Graduate	76	20.1
Post Graduate	78	20.6
Other	34	9.0
<i>Occupation</i>		
Government employee	73	19.3
Private employee	35	9.3
Students	252	66.6
Retired	4	1.1
Other	14	3.7
<i>Income Range</i>		
Less than Rs. 20,000	187	49.5
Rs. 20,001-40,000	68	18.0
Rs. 40,001-60,000	78	20.6
Above Rs. 60,000	45	11.9

Table 5: The ranking of ATM Service Quality

Descending Order	M	M	Ascending Order
ATM service provider always provides the facility of Power Back up	3.95	3.73	ATM contact person is available to address problems
ATM provides accurate account records	3.94	3.75	Breakdown of ATMs is fixed promptly
ATM functions all the time	3.94	3.76	ATM language is easy to understand
ATM provides consistent services	3.92	3.77	ATM provides clear instructions on usage
ATM provides precise receipts to confirm transactions	3.90	3.78	ATMs are easy to use for transactions
I have no fear for the security of my personal information	3.88	3.79	ATM displays advertisements for bank services
I feel safe while using an ATM	3.87	3.80	The ATM system adjusts wrongful deductions

Table 3: Item-wise descriptive results

Items	M	SD
<i>Reliability</i>	3.94	0.702
ATM functions all the time	3.94	0.892
ATM provides consistent services	3.92	0.928
ATM service provider always provides the facility of Power Back up	3.95	0.900
<i>Responsiveness</i>	3.79	0.784
The ATM system adjusts wrongful deductions	3.80	1.039
ATM problems are settled to my satisfaction	3.81	0.979
ATM contact person is available to address problems	3.73	1.033
Breakdown of ATMs is fixed promptly	3.75	1.028
ATM cards are promptly replaced	3.84	0.985
<i>Ease of Use</i>	3.77	0.787
ATM provides clear instructions on usage	3.77	1.013
ATMs are easy to use for transactions	3.78	1.050
ATM language is easy to understand	3.76	1.028
ATM displays advertisements for bank services	3.79	1.042
<i>Security</i>	3.85	0.753
I feel safe while using an ATM	3.87	0.963
I have trust and security in the ATM	3.80	0.990
I have no fear for the security of my personal information	3.88	0.935
<i>Accuracy</i>	3.89	0.713
ATM provides accurate account records	3.94	0.889
ATM provides precise receipts to confirm transactions	3.90	0.945
Fee charged for using other bank's ATM is fair	3.83	0.975
<i>Customer Satisfaction</i>	3.91	0.718
Taking into account your total experience, overall, how satisfied are you with your ATM service provider?	3.88	0.937
ATM service provider always meets your expectations	3.88	0.990
ATM service provider always meets your needs	3.90	0.927
How much is your overall satisfaction with the ATM service provider?	3.98	0.907
<i>Customer Retention</i>	3.96	0.660
In the future, there are chances that you will carry on your relationship with your ATM service provider.	3.95	0.882
If people asked you, you would strongly recommend that they should deal with this ATM service provider	3.92	0.928
ATM service provider fulfills your needs most of the time	3.95	0.898
You never think to switch elsewhere even, when your ATM service provider fails to meet your expectation	4.03	0.861