Factors Affecting Customer Satisfaction on Automated Teller Machines Provided by Commercial Banks in Kathmandu Valley

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Abstract

This study investigates the factors influencing customer satisfaction with Automated Teller Machines (ATMs) provided by commercial banks in Kathmandu Valley. ATMs are pivotal in modern banking, offering 24/7 access to financial services, including cash withdrawals, balance inquiries, and bill payments. The research examines key factors such as security and privacy, convenience, system availability, speed of ATM services, responsiveness, and reliability. Primary data was collected from 100 ATM cardholders across five major commercial banks through a structured questionnaire. The study employs both descriptive and inferential statistical methods, including regression analysis, to assess the impact of these variables on customer satisfaction. Results indicate that convenience and system availability significantly influence customer satisfaction, while security and privacy, speed, responsiveness, and reliability show less impact. The findings highlight the importance of improving ATM service quality to enhance customer satisfaction and provide a competitive edge in the banking sector. The study also contributes to the literature by focusing on factors such as system availability and security that have been underexplored in previous research.

***Keywords**: ATM, customer satisfaction, Service quality, Kathmandu Valley.*

1. Introduction

Banks are the financial institution which accept the deposits and provides the loans to the general public who requires. A bank can be charged certain amount of the interest in the loans amount which can be paid quarterly or annually depending upon the loans. In the economy sector, bank plays very important

role. Banks primarily involve in financial intermediation activities in an economy. Simply, automated teller machine is an electronic banking card which helps the customers to withdraw their deposited money without going to respective branches. It means that one can withdraw deposited money without going the bank. An Automated teller machine (ATM) is one of the specialized technologies that makes convenient for the account holder. It also helps to know the exact amount of the balance of an individual. One can print mini statement of the transactions easily with the help ofthe ATM cards. By inserting an ATM card in the machine it requires to enter Personal Identification Number (PIN) which can be confidential. A customer can access the services of the ATM 24/7 days. Digital banking is very recent phenomenon in Nepal. Here the era of modern banking started with Nabil Bank introducing credit cards in the early 1990s. A customer can easily cash withdrawal, The ATM does need to be of particular bank only, an individualmay use any other banks ATM to withdraw amount which charges some fees.

Customer satisfaction is important for business success. Satisfaction depends on product and service quality. Banking sector provides various services to customers for higher customer satisfaction. In present competitive environment, customer satisfaction is an important element to win the competitors. Bank management should identify the service quality dimensions to satisfy their customers by research and development programs. Thebanking industry is highly competitive. Banks are not only competing among each other; but also with non-banking and financial institutions (Joshi, 2019). Anyone with a credit card or debit card can access cash atmost ATMs. ATMs are convenient, allowing consumers to perform quick self-service transactions such as deposits, cash withdrawals, bill payments, and transfers between accounts. Fees are commonly charged for cash withdrawals by the bank where the account is located by the operator of the ATM or by both. Some or all of these fees can be avoided by using an ATM operated directly by the bank that holds the account (KAGAN, 2020). The ATM has made cash at bank just seconds away all through the day at everywhere of the globe that allows banking customers to perform a number of transactions like making balance inquiries, withdrawing cash from personal account, making deposits and fund transfer from one account to another and electronic business transactions (Shrestha, 2020).

2. Objective of the Study

The main objective of this study is to identify the different factors affecting customer satisfaction on automated tellermachines provided by commercial banks in Kathmandu Valley.

3. Literature Review

Customer satisfaction and services offered have long been a key research topic. With the advancement of banking technology, it is expected that customers experience seamless financial transactions. However, ATM machines often present issues such as failure to dispense cash, incorrect exchange rates, card retrieval problems, and difficulty accessing money from specific ATMs (Sohail Imran Khan, 2019). Tadesse and Bakala (2021) found that people find ATM services convenient and enjoyable due to the digital, computerized nature of the system, which allows access from anywhere. ATMs quickly handle withdrawals, deposits, balance inquiries, and other services, having been developed by the telecommunications industry to efficiently transmit data over a single network. Technology plays a crucial role in the banking industry's growth, with Information and Communication Technology (ICT) enabling electronic access, processing, storage, and distribution of data. ATMs are a key banking facility, offering 24-hour customer service for various transactions to eligible customers (Malav Vineshkumar & Bhatt, 2018). The use of ATMs in banking transactions is growing globally, bringing significant changes to the Nepalese financial sector as well. Nepalese commercial banks are increasingly offering technology-based services. As a service-oriented industry, banks in Nepal provide various services to customers, with ATMs being a key service that adds value. Before adopting ATMs, factors such as safety, convenience, sufficient availability, user-friendly systems, and functionality are considered (Prakash, 2019). Customer attitudes play a crucial role in the success and sustainability of commercial banks, as banking is mainly a service-driven industry. Enhancing service quality can improve customer loyalty and foster positive attitudes. Therefore, Nepalese commercial banks can build a base of satisfied customers by offering high-quality ATM services (Shrestha, 2020). Customers were pleased with ATM service quality because of empathy, tangibles, ease of use, and comfort, according to the report. As a result, bank managers should strive to boost the performance of those three rejected components in order to satisfy customers and provide a high level of service, which couldgive banks a competitive edge in terms of ATM service quality (Alexis & Chen, 2019). If the ATM service is consistent in terms of service and cash availability, customers will be happy. The main factors that contribute to gaining happy customers are fulfillment and ease of use. Consumers want to feel safe and private when making transactions; as a result, if the business offers reliable transaction services, it would be able to easily receive satisfied customers (Aslam et al., 2019). Customers receive high-quality service from ATMs, and demographic factors such as gender, age group, educational attainment, and occupation have an impact on ATM use. Customers are pleased with the service quality

of ATMs, but there is a need to enhance the service quality of ATMs since all of the measurements of ATM service quality are rated as satisfied by customers (Prasad, 2018). Technology has had a huge impact on the banking industry; the trend in banking has changed from cash to cheques, which has then been transformed to plastic cards. In thebanking industry, ATMs are extremely important. It is one of the most common distribution channels because it allows customers to conduct banking from anywhere at any time. In general, ATMs support both banks and customers in a number of ways(Arun & Singh, 2019). Customers who wish to withdraw smaller denominations at any time should be able to do at the ATM, which should be available in lower or lesser denominations. Customers should be able to see their account balances by receiving receipts from the ATM following each transaction (Abasimi et al., 2018). (Tirhas et al., 2017) studied that market the full spectrum of their services, banks must develop a diversified distribution strategy. The customer was extremely pleased with the promptness of card delivery, the number of transactions, the accuracy of the notes, and the convenient location, according to this report. The study also found that customers were worried about a lack of privacy while completing transactions, a reduction in balance without cash payment, cards being blocked at ATMs, and a fear of protection. The banking sector is vital for economic growth and has advanced with technology. Banks use ATMs, internet banking, and mobile banking to lower costs and improve performance, productivity, and customer satisfaction. Service quality drives satisfaction and loyalty, helping banks gain a competitive edge and enhance their capabilities (Joshi, 2019). Information and communication technology has greatly advanced the banking sector, with ATMs becoming a popular e-banking service. Most respondents use ATMs for cash withdrawals and are satisfied with their availability. However, many express dissatisfactions with the transaction fees and the handling of ATM-related customer complaints (Malav, Vineshkumar & Bhatt, 2018). Tewodros and Debela (2019) found that most customers preferred using ATMs for cash withdrawals, followed by fund transfers. However, customers raised several concerns, including unreliable networks, daily withdrawal limits, unexplained balance reductions, ATM service fees, machines running out of cash, blocked cards, and long wait times. Ochumbo and Matimbwa (2018) found that factors like convenience, reliability, responsiveness, security, cost, and efficiency positively influence customer satisfaction, while privacy has a negative impact. This is likely due to customers feeling vulnerable with private services, leading to dissatisfaction, especially among those unfamiliar with ATM services or reluctant to discuss privacy issues.

Research Hypothesis

$H_0$1: There is no significant impact of security and privacy on customer satisfaction.

$H_0$2: There is no significant impact convenience on customer satisfaction

$H_0$3: There is no significant impact system availability on customer satisfaction

$H_0$4: There is no significant impact speed of ATMs services on customer satisfaction

$H_0$5: There is no significant impact responsiveness on customer satisfaction

$H_0$6: There is no significant impact reliability on customer satisfaction

4. Methodology

The research methodology of this study aims to examine the factors influencing customer satisfaction with ATM services in Kathmandu Valley. Primary data was collected through a structured questionnaire administered to ATM cardholders in Kathmandu Valley, the study used simple random sampling method to select 100 respondents from five commercial banks (namely, NIC Asia Bank Limited, Global IME Bank Limited, Rastriya Banijya Bank Limited, Machhapuchchhre Bank Limited and Everest Bank Limited) with 20 respondents chosen from each bank. The questionnaire covered demographic information, service quality dimensions like security, convenience, system availability, and customer satisfaction. The data was analyzed using both descriptive and inferential statistical methods, with tools like SPSS and MS Excel employed for the analysis. A multiple regression model was used to evaluate the impact of various factors on customer satisfaction, with security, convenience, system availability, and other service dimensions acting as independent variables. This study fills a research gap by focusing on system availability and privacy in ATM services, offering new insights into the factors influencing customer satisfaction in this context. A multiple regression model was used to examine the effects of different factors on customer satisfaction, with the model formulated as follows:

$$Customer\ satisfaction = \beta_0 + \beta_1 (Security\ and\ privacy) + \beta_2 (Convenience) + \beta_3 (System\ availability) + \beta_4 (Speed\ of\ ATM\ services) + \beta_5 (Responsiveness) + \beta_6 (Reliability) + \varepsilon_i$$

5. Results and Discussion

Demographic Characteristics

Table 1: Demographics Characteristics of Respondents

Gender	Respondents(n)	Percentage
Male	54	54
Female	46	46
Total	100	100
Marital Status		
Unmarried	77	77
Married	23	23
Total	100	100
Occupation		
Employee	27	27
Businessmen	8	8
Student	63	63
Farmer	2	2
Total	100	100
Income		
Dependents	53	53
Below 2 Lakhs	13	13
2 Lakhs to 5 Lakhs	16	16
6 lakhs to 10 Lakhs	13	13
Above 10 Lakhs	5	5
Total	100	100
Qualification		
Below SLC/SEE	3	3
SLC/SEE	4	4
Plus 2	9	9
Bachelors	35	35
Masters and Above	48	48
Others (CA)	1	1
Total	100	100
Age		
Below 21	10	10
21-30	76	76
31-40	11	11
41-50	2	2
51 and Above	1	1
Total	100	100

Table 1 represents a demographic analysis of 100 respondents. In terms of gender, 54% of respondents are male, and 46% are female. Regarding marital status, the majority (77%) are unmarried, while 23%

are married. When it comes to occupation, 63% of the respondents are students, 27% are employees, 8% are businessmen, and 2% are farmers. In terms of income, over half of the respondents (53%) are dependents, while 13% earn below 2 Lakhs, 16% earn between 2 Lakhs and 5 Lakhs, 13% earn between 6 Lakhs and 10 Lakhs, and 5% earn above 10 Lakhs. The qualification distribution shows that 48% have completed a Master's degree or higher, 35% hold a Bachelor's degree, 9% have completed Plus 2, 4% have an SLC/SEE qualification, 3% have qualifications below SLC/SEE, and 1% hold other qualifications, such as CA. In terms of age, 76% are between the ages of 21-30, 10% are under 21, 11% fall within the 31-40 range, 2% are between 41-50, and 1% are 51 or older. This demographic data highlights a diverse respondent base across multiple categories.

Descriptive Statistics

a) Security and Privacy

Table 2: Descriptive Statistics of Security and Privacy

Statements	Min	Max	Mean	Std. Deviation
It is necessary for a guard to be present at ATM posts.	1	5	3.570	1.0941
I trust that bank ATM will not misuse my personal information.	1	5	3.700	1.1055
I feel safe during my ATM transaction	1	5	3.530	1.0391
I can rely and have belief in the security of the ATM banking.	1	5	3.470	0.9687
Average			3.5675	1.0518

Table 2 shows the results of respondents' perceptions regarding ATM security and safety. The first statement, "It is necessary for a guard to be present at ATM posts," has a mean score of 3.570, with a standard deviation of 1.0941, indicating a moderate level of agreement and variation in responses. The second statement, "I trust that bank ATM will not misuse my personal information," has a mean score of 3.700 and a standard deviation of 1.1055, suggesting a slightly stronger trust but still some variation in respondents' views. Regarding the feeling of safety, "I feel safe during my ATM transaction" received a mean score of 3.530 with a standard deviation of 1.0391, reflecting a moderate level of safety perception with some differences in responses. The statement, "I can rely and have belief in the security of ATM banking," has a mean score of 3.470 and a lower standard deviation of 0.9687, indicating slightly less confidence in the security but with more consistent responses. Overall, the average mean score for these statements is 3.5675, with a standard deviation of 1.0518, reflecting a

generally moderate perception of ATM security and safety, with some variation in how respondents feel about the presence of guards, trust in personal information security, and the overall safety of ATM transactions.

b) Convenience

Table 3: Descriptive Statistics of Convenience

Statements	Min	Max	Mean	Std. Deviation
ATMs are conveniently located in Kathmandu Valley.	1	5	3.390	1.0814
ATMs of my banks are easily found at all important places of valley like mall,airport, hospitals etc.	1	5	3.460	1.1670
ATM operates for 24 hours/7 days without errors.	1	5	2.890	1.1449
ATM operates even when electricity is cut off.	1	5	3.440	0.9354
Average			3.2950	1.0821

Table 3 provides data on respondents' perceptions regarding the availability and reliability of ATMs in Kathmandu Valley. The first statement, "ATMs are conveniently located in Kathmandu Valley," has a mean score of 3.390 and a standard deviation of 1.0814, indicating a moderate level of agreement with some variation in responses. The second statement, "ATMs of my banks are easily found at all important places of the valley like malls, airports, hospitals, etc.," has a slightly higher mean of 3.460 with a standard deviation of 1.1670, suggesting a similar level of convenience but with greater variation in respondents' experiences. For the statement, "ATM operates for 24 hours/7 days without errors," the mean score is lower at 2.890, with a standard deviation of 1.1449, reflecting a relatively lower level of satisfaction with the reliability of ATMs, indicating more variation in responses. The statement, "ATM operates even when electricity is cut off," has a mean score of 3.440 and a lower standard deviation of 0.9354, indicating moderate agreement and relatively consistent responses regarding the backup operation of ATMs during power outages. The overall average mean score of 3.2950, with a standard deviation of 1.0821, suggests that while ATMs are generally available and located conveniently, there is some inconsistency in their reliability and operation in Kathmandu Valley.

c) System availability

Table 4: Descriptive Statistics of System Availability

Statements	Min	Max	Mean	Std. Deviation
There is always availability of cash in my ATM posts.	1	5	2.840	1.0514
There is availability of power backup/Generator/Inverter.	1	5	3.080	1.0794
Keypad of ATM machines are working properly	1	5	3.420	1.0841
Overall system of my ATM like slips shows my updated balance and processingtime also shows properly	1	5	3.430	1.0754
Average			3.1925	1.0727

Table 4 presents respondents' views on the operational aspects of ATMs. The statement "There is always availability of cash in my ATM posts" has a mean score of 2.840 with a standard deviation of 1.0514, indicating a moderate level of agreement, but suggesting that cash availability in ATMs may not always be consistent. The statement "There is availability of power backup/Generator/Inverter" received a mean score of 3.080 and a standard deviation of 1.0794, showing a slight positive perception regarding the presence of power backup, with some variation in responses. For "Keypad of ATM machines are working properly," the mean score is 3.420 with a standard deviation of 1.0841, suggesting a generally positive perception of keypad functionality, although with moderate variation. The statement "Overall system of my ATM like slips shows my updated balance and processing time also shows properly" has a mean score of 3.430 and a standard deviation of 1.0754, indicating a moderate level of satisfaction with the overall system performance of ATMs. The average mean score of 3.1925 with a standard deviation of 1.0727 reflects a generally moderate but varied perception of the operational reliability of ATMs, with some areas needing improvement, particularly regarding cash availability and power backup.

d) Speed of ATM services

Table 5: Descriptive Statistics of speed of ATM services

Statements	Min	Max	Mean	Std. Deviation
ATM serves as per my expected time.	1	5	3.3600	1.0779
Transactions process is much faster than visiting a branch.	1	5	4.000	1.0730
ATM provides fast services as it saves both time and effort.	1	5	4.100	1.020
Speed of delivery of ATM cards are fast.	1	5	3.540	1.2178

Average	3.7500	1.0971

Table 5 reflects respondents' perceptions of the efficiency and speed of ATM services. The statement "ATM serves as per my expected time" has a mean score of 3.3600 with a standard deviation of 1.0779, suggesting a moderate level of satisfaction with the timeliness of ATM services, though there is some variation in responses. The statement "Transactions process is much faster than visiting a branch" received a higher mean score of 4.000 with a standard deviation of 1.0730, indicating strong agreement that ATM transactions are quicker compared to in-branch visits, though with some variation in responses. "ATM provides fast services as it saves both time and effort" has the highest mean score of 4.100 with a standard deviation of 1.020, reflecting a positive perception of the time-saving aspect of ATM services. The statement "Speed of delivery of ATM cards are fast" received a mean score of 3.540 with a higher standard deviation of 1.2178, suggesting moderate satisfaction but with more significant variation in how respondents perceive the speed of card delivery. The average mean score of 3.7500 with a standard deviation of 1.0971 indicates generally positive views on the speed and efficiency of ATM services, with some variability in respondents' experiences, especially concerning card delivery.

e) Responsiveness

Table 6: Descriptive Statistics of Responsiveness

Statements	Min	Max	Mean	Std. Deviation
Bank staff is not willing to help me to solve my problems regarding ATM issues.	1	5	2.680	1.0038
ATM broken-down are promptly fixed.	1	5	2.840	0.9504
ATM is used to check and print account and mini statements easily.	1	5	3.310	1.0317
Bank staff does not heartily serve you in peak hours.	1	5	3.120	1.1658
Average			2.9875	1.0379

Table 6 reflects respondents' perceptions of bank staff support and ATM functionality. The statement "Bank staff is not willing to help me to solve my problems regarding ATM issues" has a mean score of 2.680 with a standard deviation of 1.0038, suggesting that respondents tend to disagree with this statement, indicating a moderate level of dissatisfaction with staff willingness to assist with ATM-related issues. "ATM broken-down are promptly fixed" received a mean score of 2.840 with a standard

deviation of 0.9504, reflecting some dissatisfaction with the speed at which broken ATMs are repaired. The statement "ATM is used to check and print account and mini statements easily" has a mean score of 3.310 with a standard deviation of 1.0317, showing moderate satisfaction with the ease of using ATMs for checking and printing statements. For the statement "Bank staff does not heartily serve you in peak hours," the mean score of 3.120 with a standard deviation of 1.1658 indicates that respondents generally feel that staff service is less enthusiastic during busy times, although the responses vary. The average mean score of 2.9875 with a standard deviation of 1.0379 suggests a moderate level of dissatisfaction with both ATM-related issues and staff service, highlighting areas for improvement in customer support and ATM maintenance.

f) Reliability

Table 7: Descriptive Statistics of Reliability

Statements	Min	Max	Mean	Std. Deviation
Balance in my account reduced without withdrawal of my cash.	1	5	2.330	1.0055
I don’t find fake currency notes from my ATM.	1	5	3.850	1.0952
Maximum withdrawal limit per day is reliable i.e. (1 lakh).	1	5	3.320	1.2133
I always get mini statement.	1	5	2.990	1.0588
Average	1	5	3.1225	1.0932

Table 7 presents respondents' experiences with various ATM-related issues. The statement "Balance in my account reduced without withdrawal of my cash" has a mean score of 2.330 with a standard deviation of 1.0055, indicating that respondents generally disagree with the occurrence of unauthorized deductions from their accounts, though there is some variation in responses. "I don’t find fake currency notes from my ATM" received a mean score of 3.850 with a standard deviation of 1.0952, showing strong agreement that fake currency notes are not dispensed from ATMs, suggesting a high level of trust in the quality of currency provided by ATMs. For the statement "Maximum withdrawal limit per day is reliable (i.e., 1 lakh)," the mean score is 3.320 with a higher standard deviation of 1.2133, reflecting moderate satisfaction with the daily withdrawal limit, although there is considerable variation in opinions. "I always get mini statement" has a mean score of 2.990 with a standard deviation of 1.0588, indicating that respondents are somewhat dissatisfied with consistently receiving mini statements. The average mean score of 3.1225 with a standard deviation of 1.0932 suggests that while

some respondents are generally satisfied with the ATM services regarding fake currency and withdrawal limits, there is notable dissatisfaction or inconsistency in other areas, such as account balance discrepancies and receipt of mini statements.

Regression Analysis

Table 8: Regression Analysis of Variables

	Beta	T-value	Sig.	VIF
(Constant)	-0.92	-.216	.829	
Security and Privacy	0.173	1.697	.093	1.509
Convenience	0.338	3.030	.003	1.816
System Availability	0.339	2.501	.014	3.011
Speed of ATM Services	0.218	1.913	.059	2.477
Responsiveness	-0.40	-.377	.707	1.194
Reliability	-0.38	-.284	.777	1.790
R-square	*0.554*			
F	*19.251*			
Sig	*0.000*			

Table 8 explores the relationship between various independent variables and a dependent variable, likely related to customer satisfaction or ATM service quality. The analysis shows that convenience (Beta = 0.338, p-value = 0.003) and system availability (Beta = 0.339, p-value = 0.014) are significant predictors of the dependent variable, with p-values less than 0.05, indicating strong positive relationships. Speed of ATM services (Beta = 0.218, p-value = 0.059) also has a positive but marginally significant relationship. In contrast, responsiveness (Beta = -0.40, p-value = 0.707) and reliability (Beta = -0.38, p-value = 0.777) are not statistically significant, as their p-values are well above 0.05. The R-square value of 0.554 suggests that 55.4% of the variation in the dependent variable is explained by the independent variables, indicating a moderate fit of the model. The F-statistic of 19.251 with a significance level of 0.000 confirms that the overall regression model is statistically significant. The VIF values for all variables are below 10, indicating no multicollinearity issues. Overall, the analysis highlights that convenience and system availability are the most important factors influencing the

dependent variable, while responsiveness and reliability have little to no impact. The summary of hypothesis is presented in Table 9.

Table 9: Summary of hypothesis

Hypothesis	*Statement*	*Results*	*Status*
$H_0$1	There is no significant relationship between security and privacy and customer satisfaction.	0.093>0.05	Accept
$H_0$2	There is no significant relationship between convenience and customer satisfaction.	0.003<0.05	Reject
$H_0$3	There is no significant relationship between system availability and customer satisfaction	0.014<0.05	Reject
$H_0$4	There is no significant relationship between speed of ATM services and Customer satisfaction	0.059>0.05	Accept
$H_0$5	There is no significant relationship between responsiveness and customer satisfaction.	0.707>0.05	Accept
$H_0$6	There is no significant relationship between reliability and Customer satisfaction.	0.777>0.05	Accept

6. Conclusion

This study provides valuable insights into the factors that influence customer satisfaction with Automated Teller Machines (ATMs) in Kathmandu Valley. Through the analysis of key service quality dimensions such as security and privacy, convenience, system availability, speed of services, responsiveness, and reliability, the study reveals that convenience and system availability are the most significant contributors to customer satisfaction. These findings highlight the critical role of operational efficiency and accessibility in enhancing ATM service quality, which in turn drives customer satisfaction. While other factors like security, privacy, and speed showed some influence, their impact was less pronounced, suggesting that banks need to focus more on improving the ease of use and availability of ATMs to meet customer expectations. The results of the regression analysis provide a deeper understanding of how various variables interact to shape customer perceptions and satisfaction. This study contributes to the existing literature by addressing gaps in research, particularly in areas such as system availability and security, which have not been explored as comprehensively in the context of ATM services. In light of these findings, it is recommended that commercial banks in Kathmandu Valley prioritize investments in infrastructure that enhance system reliability and accessibility. By doing so, they can improve customer loyalty, gain a competitive advantage in the

banking sector, and foster higher levels of satisfaction among ATM users. Future research could further explore the evolving role of technology in ATM services, particularly in terms of integrating advanced security measures and offering more personalized banking experiences.

References

Abasimi, I., Evans, A. A., & Martin, A. Y. A. (2018). Automated Teller Machine (ATM) service and customer satisfaction in the Upper East Region of Ghana. *American Journal of Economics, 8*(2), 69–75. https://doi.org/10.5923/j.economics.20180802.01

Alexis, N., & Chen, W. (2019). An empirical study analyzing the ATM service quality and customer satisfaction relationship in Rwanda. *International Journal of Business and Economics Research, 8*(6), 439. https://doi.org/10.11648/j.ijber.20190806.24

Arun, A., & Singh, P. A. (2019). Customer satisfaction towards ATM services—A comparative study of Punjab National Bank and Axis Bank. *International Journal of Scientific Development and Research, 4*(8), 134–139. www.ijsdr.org

Aslam, W., Tariq, A., & Arif, I. (2019). The effect of ATM service quality on customer satisfaction and customer loyalty: An empirical analysis. *Global Business Review, 20*(5), 1155–1178. https://doi.org/10.1177/0972150919846965

Joshi, C. (2019). Impact of Automated Teller Machine (ATM) service quality on customer satisfaction in Nepalese commercial banks. *Contemporary Research: An Interdisciplinary Academic Journal, 3*(1), 7–18. https://doi.org/10.3126/craiaj.v3i1.27484

Kagan, J. (2020, April). Automated Teller Machine. *Investopedia*. https://www.investopedia.com/terms/a/atm.asp#:~:text=An%20automated%20teller%20machine%20(ATM)%20is%20an%20electronic%20banking%20outlet,a%20branch%20representative%20or%20teller.

Malav Vineshkumar, S., & Bhatt, B. (2018). An empirical study on customer satisfaction of ATM services in Ahmedabad city. *International Journal of Management and Applied Science, 4*(3), 10–15. http://iraj.org

Ochumbo, A., & Matimbwa, H. (2018). Automated Teller Machine and customer satisfaction in Tanzania: A case of CRDB Bank in Iringa. *Journal of Business Management and Economic Research, 2*(3), 11–20. https://doi.org/10.29226/tr1001.2018.23

Prakash, S. (2019). Banking customer attitudes toward ATM service in Nepal. *International Journal of Advances in Scientific Research and Engineering*.

Prasad, R. (2018). Service quality of Automated Teller Machine and customer satisfaction: A case study of State Bank of India, Patna (Bihar). *International Journal of Management Studies, 5*(4), 26. https://doi.org/10.18843/ijms/v5i4(5)/04

Shrestha, P. (2020). Banking customer attitudes toward ATM service in Nepal. *International Journal of Advances in Scientific Research and Engineering, 5*(12), 88–93. https://doi.org/10.31695/ijasre.2019.33652

Sohail, K., & Nabaz, N. A. (2019). The effect of ATM service quality on customer satisfaction and loyalty: An empirical analysis. *Russian Journal of Agricultural and Socio-Economic Sciences, 89*(5), 227–235. https://doi.org/10.18551/rjoas.2019-05.28

Tadesse, B., & Bakala, F. (2021). Effects of automated teller machine service on client satisfaction in Commercial Bank of Ethiopia. *Heliyon, 7*(3), e06405. https://doi.org/10.1016/j.heliyon.2021.e06405

Tewodros, B. A., & Debela, B. B. (2019). Factors affecting customer satisfaction towards the use of automated teller machines (ATMs): A case in Commercial Bank of Ethiopia, Chiro town. *African Journal of Business Management, 13*(13), 438–448. https://doi.org/10.5897/ajbm2019.8823

Tirhas, G., Fasil, D., & Addis, B. (2017). Assessment of customer satisfaction on automated teller machine in Adigrat, Ethiopia. *International Journal of Engineering Development and Research, 5*(1), 766–775.