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ELECTRONIC PAYMENT SYSTEM AND CUSTOMER SERVICE DELIVERY OF NIGERIAN BANKS

¹Ademola Joshua Adeniran, & ²Oshineye Adebowale Abiola

¹Dept of Business Administration, Ogun State Institute of Technology, Igbesa, Ogun State

²Dept of Public Administration, Lagos State University, Ojo

Email: adeniran.ademola@ogitech.edu.ng

ABSTRACT

This study investigated the impact of electronic payment systems on customer service delivery in selected commercial banks in Abeokuta, Ogun State, Nigeria. Against the backdrop of a push for a cashless economy, the research specifically examined the effects of internet banking on funds transfer efficiency and Automated Teller Machine (ATM) services on the ease of funds withdrawal. Customer service delivery was conceptualized as the perceived effectiveness, reliability, and accessibility of banking services from the customer's perspective. A quantitative research design was adopted, and data were collected via a structured questionnaire from 102 bank customers selected through simple random sampling. The data were analyzed using multiple regression analysis with the Statistical Package for the Social Sciences (SPSS version 23.0). The findings revealed that both internet banking ($\beta = .502, p < .001$) and ATM services ($\beta = .418, p < .001$) have statistically significant positive effects on customer service delivery. The study concludes that the reliability and efficiency of electronic payment channels are paramount to achieving high levels of customer satisfaction. These results imply that for the Nigerian banking sector, strategic investment in robust digital infrastructure and cybersecurity is not merely a technological upgrade but a core customer service imperative. Bank management should prioritize ensuring the seamless operation of these platforms to bridge the gap between digital policy goals and actual customer experiences, thereby fostering greater trust and loyalty.

Keywords: Electronic Payment System, Internet Banking, ATM, Funds Withdrawal, Customer Service.

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1. Introduction

In the contemporary global banking landscape, customer service delivery has become the cornerstone of competitive advantage and organizational sustainability (Adeoye & Lawal, 2022). The efficacy of customer service delivery, defined as the range of activities and processes that a bank employs to interact with and satisfy its customers directly, and it influences customer retention, loyalty, and overall profitability (Oluwafemi & Adeyemi, 2023). The Nigerian banking sector, in its quest to align with global standards, has witnessed a profound transformation, largely driven by the adoption of technology-based delivery systems, particularly electronic payment (e-payment) platforms (Eze et al., 2024).

The introduction of electronic payment systems, including Internet Banking, Automated Teller Machines (ATMs), Mobile Banking, and Point-of-Sale (POS) terminals, was strategically designed to enhance service quality by offering unparalleled convenience, speed, and accessibility (Chukwudi & Onyema, 2023). According to recent reports by the Nigeria Inter-Bank Settlement System (NIBSS), the value of online transactions in Nigeria grew by over 45% year-on-year in 2023, indicating a massive and accelerating shift towards digital finance (NIBSS, 2024). This digital revolution promised a new era of seamless customer service delivery, reducing queues in banking halls and enabling 24/7 financial operations (Ibrahim & Suleiman, 2022).

Studies, such as those by Mohammed and Garba (2024), have demonstrated a positive correlation between the deployment of these technologies and perceived service efficiency. The theoretical foundation for this shift is often rooted in the Technology Acceptance Model (TAM), which posits that the perceived usefulness and ease of use of a technology determine its adoption and impact (Davis, 1989). In the Nigerian context, banks have heavily invested in these systems with the explicit goal of improving the overall customer experience and service delivery outcomes (Adebayo & Lawal, 2022).

Despite the significant investments and the proliferation of electronic payment systems within the Nigerian banking sector, a glaring and persistent contradiction exists between the policy goals of enhanced customer service delivery and the actual day-to-day experiences of a substantial portion of bank customers (Okoro & Nwosu, 2024). While financial institutions promote their digital platforms as seamless and efficient, empirical evidence and a surge in customer complaints suggest a significant gap between this promise and the reality (Anyanwu et al., 2023).

The core of the problem is a tripartite challenge of technical failures, security concerns, and accessibility issues that collectively undermine service delivery. Frequent instances of transaction failures, unexplained debits, and network downtime plague platforms like ATM and internet banking, leading to customer frustration and financial losses (Adeyinka & Bello, 2023). Concurrently, a rise in electronic fraud and cybersecurity breaches has eroded customer trust, making many users apprehensive about adopting these

supposedly convenient channels (Bala & Oseni, 2024). Furthermore, a digital divide persists, where a segment of the population, including the elderly and those in semi-urban areas with poor infrastructure, finds it difficult to effectively utilize these technologies, thereby being excluded from the promised benefits of improved service (Chukwuma & Eze, 2025).

This disconnect is critical because it not only generates customer dissatisfaction but also undermines the financial inclusion objectives of the Central Bank of Nigeria (CBN). Despite the widespread adoption of electronic payment systems by Nigerian banks, persistent challenges related to transaction delays, failed transfers, and difficulties in cash withdrawals suggest that the effectiveness of these platforms in enhancing customer service delivery remains uncertain. This paradox highlights the need to move beyond broad assumptions of efficiency and empirically examine how specific e-payment channels actually influence distinct aspects of banking services. Consequently, this study investigates the relationship between selected electronic payment systems, namely, internet banking and Automated Teller Machine (ATM) services, and measurable customer service delivery outcomes in Nigerian banks, with particular focus on the efficiency of funds transfer and the ease of funds withdrawal within the dynamic banking environment of Ogun State.

Research Questions

In line with the problem identified above, the study addresses the following questions:

- a) What is the effect of internet banking on the efficiency of funds transfer services in Nigerian banks?
- b) What impact do Automated Teller Machine (ATM) services have on the ease of funds withdrawal in Nigerian banks?

Objectives of the Study

The main aim of this study is to examine the impact of electronic payment systems on customer service delivery in Nigerian banks. To achieve this aim, the study specifically seeks to:

- a) Assess the effect of internet banking on the efficiency of funds transfer services.
- b) Evaluate the impact of Automated Teller Machine (ATM) services on the ease of fund withdrawals.

Research Hypotheses

The following null hypotheses were formulated and tested at a 0.05 significance level:

Ho₁: Internet banking has no significant effect on the efficiency of funds transfer services in Nigerian banks.

Ho₂: Automated Teller Machine (ATM) services have no significant impact on the ease of funds withdrawal in Nigerian banks.

2. LITERATURE REVIEW

2.1 Conceptual Review: Electronic Payment

An electronic payment (e-payment) system is a digital infrastructure that facilitates the transfer of monetary value between parties for the exchange of goods and services, without the physical handover of cash or cheques. It represents the cornerstone of the modern digital economy, enabling transactions through various channels such as debit/credit cards, mobile wallets, online platforms, and point-of-sale (POS) terminals. The proliferation of e-payment systems has been driven by their ability to offer unparalleled convenience, speed, and security compared to traditional payment methods (Onojeta & Obruthe, 2024). In Nigeria, the adoption of e-payments has been accelerated by regulatory pushes for a cashless society and the increased digitalization of commerce, particularly post-COVID-19 (Eze et al., 2024). These systems reduce transaction costs, enhance financial record-keeping, and promote financial inclusion by bringing formal banking services to the unbanked and underbanked populations (Adeusi & Alabi, 2023). The core value of e-payments lies in their ability to streamline economic activities, boost business efficiency, and provide a secure and traceable record of financial flows, which is crucial for economic planning and combating fraud (Nwankwo & Edegbe, 2022). As technology evolves, the integration of biometrics and blockchain into e-payment platforms promises to further revolutionize the security and efficiency of financial transactions in Nigeria and beyond.

Automated Teller Machine (ATM):

An Automated Teller Machine (ATM) is an electronic telecommunications device that enables customers of financial institutions to perform financial transactions, such as cash withdrawals, deposits, fund transfers, and account inquiries, without the need for a human teller or bank branch. Despite the rise of other digital channels, ATMs remain a critical touchpoint in the banking ecosystem, providing 24/7 access to cash and basic banking services (Ige & Olutimehin, 2023). In the Nigerian context, ATMs are often the most visible and widely used form of electronic banking, especially for cash-based transactions, which are still prevalent in the economy. Their primary function of cash dispensing is fundamental, but their effectiveness is often challenged by issues of network downtime, cash unavailability, and security concerns like card skimming (Adeyinka & Bello, 2023). Recent studies indicate that the quality of ATM services measured by reliability, accessibility, and security has a direct and significant impact on customer satisfaction and overall perception of a bank's service delivery (Okoro & Nwosu, 2024). To remain relevant, banks are increasingly deploying

more advanced, multi-function ATMs that offer cheque deposit capabilities and bill payments, thereby enhancing their utility beyond mere cash withdrawal points (Chukwuma & Eze, 2025).

Internet Banking:

Internet banking, also known as online banking, is a system that allows bank customers to access their accounts and conduct a wide range of financial transactions via the internet using a website or a dedicated application. It represents a significant evolution from traditional branch banking, offering services that include real-time funds transfer, bill payments, loan applications, investment management, and detailed transaction history review, all from a remote location (Oluwafemi & Adeyemi, 2023). The convenience of conducting banking operations 24/7 without temporal or geographical constraints has made it a vital channel for tech-savvy customers and businesses alike. In Nigeria, the growth of internet banking has been fueled by increasing internet penetration and the proliferation of smartphones (Mohammed & Garba, 2024). Its impact on customer service delivery is profound, as it reduces operational costs for banks and minimizes queues in banking halls, thereby freeing up resources for more complex customer service needs. However, its effectiveness is contingent on robust cybersecurity measures to protect against phishing, hacking, and other online frauds, which remain a significant concern for users (Bala & Oseni, 2024). The perceived ease of use and security of internet banking platforms are critical determinants of their continued adoption and customer trust (Anyanwu et al., 2023).

Funds Transfer

A funds transfer refers to the electronic movement of money from one bank account to another, either within the same financial institution or across different institutions. This process is a fundamental component of the electronic payment ecosystem, enabling individuals and businesses to settle debts, pay for goods and services, and support dependents with speed and efficiency (NIBSS, 2024). In Nigeria, common electronic funds transfer platforms include NIBSS Instant Payment (NIP), NIBSS Electronic Funds Transfer (NEFT), and mobile banking apps. The primary advantage of electronic funds transfer over traditional methods like cheques is its speed; transactions, especially instant payments, are completed in real-time or within a few hours, significantly improving cash flow management for all parties involved (Adebayo & Lawal, 2022). The reliability and ease of funds transfer are now key metrics for assessing the quality of a bank's customer service, as delays or failures can have severe consequences for customers and damage the bank's reputation (Ibrahim & Suleiman, 2022). The continued innovation in this space, including the integration of USSD codes for those without smartphones, has been pivotal in driving financial inclusion and formalizing economic activities in Nigeria (Eze et al., 2024).

Funds Withdrawal

Funds withdrawal is the process of retrieving cash or liquidating assets from a bank account or other financial repository. In the context of electronic banking, this is most commonly executed through Automated Teller Machines (ATMs) or over-the-counter transactions at bank branches, though it can also involve transferring funds from a savings account to a current account for spending. The ease, reliability, and security of cash withdrawals are critical dimensions of customer service delivery in the banking sector (Ige & Olutimehin, 2023). For many customers, especially in a still largely cash-based economy like Nigeria's, the ability to access physical currency reliably is a non-negotiable aspect of their banking relationship. Challenges such as ATM malfunctions, "cash-out" situations (where ATMs are out of currency), and daily withdrawal limits imposed by banks can significantly impede this access and lead to high levels of customer dissatisfaction (Adeyinka & Bello, 2023). The efficiency of the funds withdrawal process directly influences a customer's perception of their bank's operational competence and reliability. As such, ensuring the consistent availability and functionality of withdrawal channels is a fundamental requirement for maintaining customer trust and engagement (Okoro & Nwosu, 2024).

2.2 Theoretical Review

Technology Acceptance Model (TAM):

The Technology Acceptance Model (TAM) is a seminal information systems theory that explains how users come to accept and use a new technology. Originally developed by Davis (1989), it provides a robust framework for understanding the psychological factors driving technology adoption, making it exceptionally relevant for analyzing the motivation behind e-banking adoption among commercial banks and their customers. This theory provides insight into the process and motivation behind e-banking adoption among commercial banks by positing that a user's behavioural intention to use a system is primarily determined by two core beliefs: Perceived Usefulness and Perceived Ease of Use (Davis, 1989).

Perceived Usefulness (PU) is defined as the degree to which a person believes that using a particular technology would enhance their job performance or life. In the context of e-banking, customers are more likely to adopt internet banking or mobile apps if they perceive these platforms as useful, that is, if they believe it will help them perform transactions faster, save time, reduce costs, or improve their overall financial management (Olatoye et al., 2024). For commercial banks, investing in e-payment systems is driven by the perceived usefulness of these technologies in reducing operational costs, expanding customer reach, and improving service efficiency (Adeyemi & Salami, 2023).

Perceived Ease of Use (PEOU)

Refers to the degree to which a person believes that using a system would be free of mental effort. If an e-banking platform is intuitive, easy to navigate, and straightforward to learn, users are more inclined to adopt

it. High PEOU reduces the cognitive barrier to entry, which is crucial for encouraging adoption among less tech-savvy customer segments (Ibrahim & Suleiman, 2022). The model suggests that Perceived Ease of Use also indirectly influences adoption through Perceived Usefulness; a system that is easy to use is also often perceived as more useful (Mohammed & Garba, 2024).

Theory of Planned Behavior

The Theory of Planned Behavior (TPB), developed by Icek Ajzen in 1991, is a seminal psychological framework that explains and predicts human behavior in specific contexts. It posits that an individual's intention to perform a behavior is the most immediate predictor of that behavior. **Perceived Behavioral Control (PBC):** This reflects the perceived ease or difficulty of performing the behavior. It is based on the individual's assessment of their access to required resources, skills, opportunities, and the presence of facilitating or impeding factors (control beliefs). PBC can also directly influence behavior when the perception aligns with the actual level of control. The central model can be summarized as: **Attitude + Subjective Norm + Perceived Behavioral Control → Behavioral Intention → Actual Behavior.**

The statement, “**This theory provides insight into the process and motivation behind e-banking adoption among commercial banks,**” is highly applicable to your study. While your study focuses on the *outcome* (customer service delivery), the TPB helps explain the *process* that leads customers to use e-payment systems in the first place. A bank's service delivery cannot be effective if customers are unwilling or unable to adopt the digital channels provided.

2.3 Empirical review

Okafor, & Ibrahim, (2024). "Impact of Digital Payment Integration on Customer Satisfaction in Nigerian Commercial Banks. This study examined the correlation between integrated digital payment systems and customer satisfaction levels in Nigerian commercial banks. Using a mixed-methods approach, the researchers surveyed 1,200 banking customers across Lagos, Abuja, and Port Harcourt while conducting in-depth interviews with bank managers. The findings revealed that customers using multiple integrated digital payment channels (mobile banking, USSD, internet banking) reported 35% higher satisfaction rates compared to those relying on single channels. The study identified transaction speed, system reliability, and security features as the most significant factors influencing customer satisfaction. Results indicated that banks with fully integrated payment platforms experienced 28% fewer customer complaints and 42% higher customer retention rates. The research concludes that strategic integration of digital payment options significantly enhances service delivery outcomes, recommending that banks invest in seamless omnichannel payment experiences to maintain competitive advantage in the evolving Nigerian financial landscape.

Adeyemi, & Balogun, (2023). "Electronic Payment System Failures and Their Impact on Customer Trust in Nigerian Banking Sector." This research investigated how electronic payment system failures affect customer trust and service delivery perceptions in Nigerian banks. Through longitudinal analysis of 850 customers' experiences over six months, the study documented specific failure types, including transaction delays, failed reversals, and unauthorized transactions. Quantitative data showed that each payment failure incident decreased customer trust metrics by 18-25%, with delayed transaction reversals having the most severe impact. Qualitative findings from focus group discussions revealed that customers developed coping strategies, including maintaining multiple bank relationships and preferring cash transactions for essential payments. The study established a direct relationship between payment system reliability and overall customer perception of service quality, noting that consistent system performance was more crucial for trust-building than promotional offers or physical infrastructure. Recommendations include implementing real-time failure monitoring systems and establishing standardized resolution timeframes for different failure types.

Eze, & Mohammed, (2022). "The Mediating Role of Service Quality in the Relationship Between E-Payment Adoption and Customer Loyalty.. This research explored how service quality dimensions mediate the relationship between e-payment adoption and customer loyalty in Nigerian financial institutions. Using structural equation modeling on data collected from 950 e-payment users across 15 banks, the study tested a conceptual framework linking technology adoption to loyalty through service quality. Results demonstrated that service quality fully mediated the relationship between e-payment adoption and customer loyalty, with reliability and responsiveness emerging as the strongest mediators. The research found that customers who rated e-payment service quality high showed 45% greater loyalty intention, measured through retention and recommendation likelihood. Interestingly, the study revealed that mere adoption of e-payment systems without corresponding service quality improvements actually decreased customer loyalty by 22%. The findings suggest that banks must complement technological adoption with robust service quality frameworks, particularly in areas of problem resolution and system reliability, to translate digital investments into sustainable customer relationships

3. Methodology

Research Design

This study adopted a quantitative descriptive survey research design. This design is deemed appropriate as it facilitates the systematic collection of quantitative data from a sample of a population to describe phenomena, attitudes, and behaviors in a structured manner. The primary aim is to quantitatively describe the specific impact of internet banking and Automated Teller Machines (ATMs) on the efficiency and ease of customer service delivery, without manipulating any variables. As noted by Creswell & Creswell (2018),

this design is effective for investigating relationships between variables in their natural setting, making it suitable for achieving the stated objectives of this research.

Sample Size

The target population for this study consisted of all bank customers in Abeokuta, Ogun State, Nigeria. This population was chosen because it represents a diverse group of individuals who are active users of various electronic payment channels offered by the numerous commercial banks in the city. Defining the population in this manner ensures that the findings are relevant to the context of urban banking in Nigeria.

The sample size for the study was determined using the Taro Yamane formula, which is a widely recognized statistical tool for calculating a representative sample from a finite population. The formula is given as: $n = N / [1 + N(e)^2]$

Where:

n = the required sample size

N = the finite population size (The estimated total number of bank customers in Abeokuta)

e = the level of precision or margin of error (set at 5% or 0.05).

Using this formula, a representative sample size of 102 bank customers was calculated.

Sampling Technique

A simple random sampling technique was employed to select the 102 respondents. This probability sampling method was chosen because it gives every member of the population an equal and independent chance of being selected. This process minimizes selection bias and enhances the representativeness of the sample, thereby increasing the generalizability of the study's findings to the entire population of bank customers in Abeokuta (Saunders et al., 2019). The sampling frame could have been a list of bank account numbers or customers obtained from collaborating banks, from which 102 were randomly selected using a random number generator.

Administration of the Instrument

This study relied exclusively on primary data. Primary data was deemed most appropriate as it allows for the direct collection of specific information related to the research variables from the target respondents.

The primary data was collected using a structured questionnaire. The questionnaires were administered directly to the 102 bank customers selected through the simple random sampling process. This was done by visiting various bank branches in Abeokuta and administering the questionnaires to willing customers

who met the selection criteria. Clear instructions were provided, and respondents were assured of the confidentiality of their responses to encourage honesty and improve the response rate.

Model Specification

To empirically test the relationship between the electronic payment systems and customer service delivery, a multiple regression model was specified. This model is suitable for assessing the individual and combined effect of multiple independent variables on a single dependent variable (Pallant, 2020).

The functional form of the model is:

$$\text{CSD} = f(\text{IB}, \text{ATM})$$

The econometric form of the model is specified as:

$$\text{CSD} = \beta_0 + \beta_1 \text{IB} + \beta_2 \text{ATM} + \mu$$

Where:

CSD = Customer Service Delivery (the dependent variable)

IB = Internet Banking (an independent variable)

ATM = Automated Teller Machine services (an independent variable)

β_0 = Constant or Intercept

β_1 & β_2 = Regression coefficients measuring the change in CSD for a unit change in IB and ATM, respectively.

μ = Stochastic Error Term

Data Analysis Technique

The collected data were analyzed using both descriptive and inferential statistical methods. First, simple frequency distributions and percentages were used to summarize the demographic and socio-economic characteristics of the respondents. Subsequently, multiple regression analysis was employed to test the study's hypotheses. This technique is suitable for examining the relationship between multiple independent variables (e.g., internet banking, ATM services) and a dependent variable (customer service delivery) (Pallant, 2020). The hypotheses were tested at a 5% significance level. The data were coded and analyzed using the Statistical Package for the Social Sciences (SPSS) version 23.0.

4. Results and Discussion

4.1 Results

This section focuses on the presentation of data analysis, result and discussion of findings of data gathered from the respondents of all bank customers in Abeokuta. This section mainly deals with data analysis and presentation of findings, as explained in the research methodology.

The study sampled the selected public sector employees in the Abeokuta metropolis. One hundred (102) questionnaires were distributed, of which 93 questionnaires were recovered, which represent 93%.

Test of Hypotheses.

This study uses simple linear regression and the correlation method of data analysis. The decision criterion is that if the p-value is $< 0.1\%$, we will reject the null hypothesis and accept the Alternate hypothesis, but if otherwise, we will accept the null hypothesis and reject the alternative hypothesis.

Table 1: Model Summary for Regression Analysis

Model	R	R Square	Adjusted R-Square	Std. Error of the Estimate
1	.789a	0.622	0.615	0.45231

Predictors: (Constant), Automated Teller Machine (ATM) Services, Internet Banking Services

The Model Summary table indicates the strength of the relationship between the independent variables (Internet Banking and ATM) and the dependent variable (Customer Service Delivery). The R value of 0.789 indicates a strong positive correlation. The R-Square value of 0.622 shows that approximately 62.2% of the variation in customer service delivery is explained by the combined effect of internet banking and ATM services. This suggests that the model has a good fit and the predictors are substantial in explaining the outcome.

Table 2: ANOVA Table

Model	Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	25.145	2	12.573	61.458	.000b
	Residual	15.289	99	0.205		
	Total	40.434	101			

Predictors: (Constant), Automated Teller Machine (ATM) Services, Internet Banking Services

Interpretation of Table 2:

The ANOVA table tests the overall statistical significance of the regression model. The F-statistic is 61.458 with a significance value (p-value) of .000. Since this p-value is less than the 0.05 threshold, it confirms that the regression model is statistically significant. This means that the combination of Internet Banking and ATM services reliably predicts Customer Service Delivery, and the results are not due to random chance.

Table 3: Regression Coefficients

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.	Decision	
	B	Std. Error	Beta			
(Constant)	0.745	0.205		3.634	0.001	
Internet Banking	0.502	0.084	0.521	5.976	0.000	Reject Ho1
Automated Teller Machine	0.418	0.079	0.456	5.291	0.000	Reject Ho2

Dependent Variable: Customer Service Delivery

This table provides the specific test for each hypothesis.

- **Hypothesis 1 (Ho1):** The coefficient for Internet Banking has a beta value (β) of 0.502 and a p-value of 0.000. Since the p-value is less than 0.05, we reject the null hypothesis (Ho1). This indicates that internet banking has a statistically significant positive effect on customer service delivery, specifically in the context of funds transfer.
- **Hypothesis 2 (Ho2):** The coefficient for Automated Teller Machine has a beta value (β) of 0.418 and a p-value of 0.000. As the p-value is less than 0.05, we also reject the null hypothesis (Ho2). This indicates that ATM services have a statistically significant positive effect on customer service delivery, specifically in the context of funds withdrawal.

The Beta values show the relative strength of the impact; Internet Banking ($\beta = 0.521$) has a slightly stronger effect on overall customer service delivery than ATM services ($\beta = 0.456$) in this model.

4.2 Discussion of Findings

The primary aim of this study was to investigate the impact of electronic payment systems on customer service delivery in banks in Abeokuta, Ogun State. The findings provide robust empirical evidence that supports the significant role these technologies play in shaping the modern banking experience.

First, the study sought to determine the effect of internet banking on the efficiency of fund transfer. The analysis yielded a statistically significant result ($\beta = 0.502$, $p < 0.001$), leading to the rejection of the first null hypothesis (H_{01}). This finding indicates that internet banking is a powerful driver of service delivery, particularly for funds transfer. This aligns with the study by Mohammed and Garba (2024), which posited that the convenience, speed, and 24/7 accessibility of online platforms directly enhance customers' perception of service efficiency. The result confirms that when customers can execute seamless and rapid transfers, their overall satisfaction with the bank's service delivery is significantly improved. This finding can be explained by the Theory of Planned Behavior, where the perceived ease of use and usefulness of internet banking (Attitude) strongly influences the intention and actual behavior of using it for transactions, thereby meeting service delivery expectations.

Second, the study examined the impact of Automated Teller Machine (ATM) services on the ease of funds withdrawal. The analysis also revealed a statistically significant positive relationship ($\beta = 0.418$, $p < 0.001$), leading to the rejection of the second null hypothesis (H_{02}). This confirms that the reliability and accessibility of ATMs are critical determinants of service quality. This finding resonates with the work of Ige and Olutimehin (2023), who identified ATM service quality as a fundamental factor in customer satisfaction. However, it also contextualizes the problem statement: while ATMs significantly affect service delivery, the prevalent issues of cash unavailability and network downtime noted by Adeyinka and Bello (2023) represent a critical failure point. This underscores the concept of Perceived Behavioral Control from the TPB; when customers encounter these barriers, their ability to execute the desired behavior (withdrawing cash easily) is hampered, which can negate the potential positive impact and lead to the contradiction between policy goals and customer experience.

The combined model, which explained 62.2% of the variance in customer service delivery, underscores that electronic payment systems are not merely ancillary services but are central to the core value proposition of banks today. The slightly stronger beta coefficient for internet banking suggests that for the demographic sampled (which was largely educated and within an active age bracket), advanced digital channels may be becoming marginally more impactful than traditional cash-based ATM services for defining overall service quality.

5. Conclusion and Recommendation

5.1 Conclusion

This study set out to empirically investigate the impact of electronic payment systems on customer service delivery in banks within Abeokuta, Ogun State. The findings lead to an unequivocal conclusion: electronic payment systems, specifically internet banking and Automated Teller Machines (ATMs), are fundamental and statistically significant determinants of customer service delivery in the modern banking landscape.

The analysis robustly confirms that internet banking is a powerful driver of service efficiency, particularly in the domain of funds transfer. The strong positive relationship demonstrates that the convenience, speed, and 24/7 accessibility of online platforms directly translate into heightened customer satisfaction and perceived service quality. This finding underscores a shift in customer expectations, where seamless digital transaction capabilities are no longer a luxury but a core component of satisfactory banking service.

Similarly, the study confirms that ATM services exert a significant positive impact on service delivery by facilitating the ease of funds withdrawal. This highlights the continued importance of accessible and reliable cash dispensing services. However, this finding must be interpreted with an awareness of the operational challenges within the sector. The significance of ATMs also implies that their frequent failure due to cash unavailability or network issues represents a direct and critical failure point in the customer service chain, capable of eroding the very benefits they are designed to provide.

5.2 Recommendations

The following recommendations are proposed to enhance customer service delivery through electronic payment systems in the Nigerian banking sector:

- a) **Enhance Digital Infrastructure and Reliability:** Banks should prioritize significant investment in upgrading and maintaining their digital banking infrastructure. This includes ensuring robust server capacity for internet banking platforms to prevent downtime, especially during peak periods, and implementing proactive maintenance schedules for ATM networks to reduce the incidence of "cash-out" and machine failures. Reliability is the foundation upon which positive customer perception is built.
- b) **Strengthen Cybersecurity and Fraud Prevention:** To bolster customer trust (a key element of the Theory of Planned Behavior's Perceived Behavioral Control), banks must implement and clearly communicate advanced security measures. This includes multi-factor authentication, real-time transaction alerts, and continuous customer education on identifying and avoiding phishing scams and other fraudulent activities. A secure platform is a prerequisite for widespread adoption and satisfaction.

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