Queuing System and Performance of Automated Teller Machine of Access Bank Plc, Uyo

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ABSTRACT*: The focus of this study had been on Queuing System and Performance of Automated Teller Machine of Access Bank Plc, Uyo. The work was necessitated based on the cashless policy and* the increasing waiting lines experienced by the various stakeholders in the Automated Teller Machine. *The aim of the study was to* determine the effect of customer arrival, service discipline and service mechanism has on the performance of Automated Teller Machine of Access bank in Uyo. *Relevant literatures were reviewed and the methodology adopted was survey research design, a population of 1,326 which emanated from the service rate of a five- day study was used for the study, the data was analyzed using tables. The data were obtained through observation method. Both descriptive and inferential statistics were used to analyze collated data. These include: frequency, percentage, mean, rank, Pearson product Moment Correlation and Linear multiple regression. The finding of the study revealed that* customer arrival have a significant positive impact on the financial performance of Access Bank in Uyo. The study further reveal that service discipline indeed enhances the market performance of Access in Uyo. The study also indicate that *service* mechanism have a significant positive impact on the shareholder return of Access Bank, Uyo. *The study concluded that customer arrival, service discipline and service mechanism are the three major components of Queue System that have positive significant impacts on the performance of Automated Teller Machine ATM of Access Bank in Uyo. Based on the findings, it was recommended* that ATM queuing system offer valuable insights for the banking sector, suggesting strategies for improving financial performance, market performance, and shareholder returns.
KEYWORDS: Queuing system, service mechanism, service discipline, financial performance

INTRODUCTION

A dozen of business organizations make use of queues in an attempt to rendering certain services to their customers. Queues also known as waiting lines are very common where certain market conditions demand that customers wait in line for the operation, such as in the banking halls, ATM machines, hospitals, supermarkets, restaurants, government and public service offices, airports and even public transport among others. Queues are formed when resources are limited thereby causing people to wait for the supply of service or when the service facilities stand idle and wait for customers. This suggest that a queue is formed when there are less service points available than the people waiting, or when the total number of service facilities exceeds the number of customers requiring services. Waiting time depends on the number of customers on the queue, the number of servers serving the queue, and the duration of service time for each customer. Modern technology proliferations have enabled service providers to incorporate many different technologies into their service delivery.

Though they had problems managing large lines, service-oriented firms are now able to successfully manage their customers thanks to technological improvements. According to Uddin et al. (2016), poor queue management will result in uneasy and agitated customers as well as reduced employee satisfaction. Remembering that customers regularly select other service providers who offer higher-quality services is also important. Over time, automated service delivery employing computer technology has expanded in both scope and depth. A few examples of how computer-aided automation is developing in the service sector include mini-state delivery, payment processing, and business process automation, according to Marinkoric and Obradovic (2015). Due to the difficulties in forecasting customers' arrival pattern for service accurately and/or the time needed to deliver service to each customer, it is very difficult to make accurate decisions about the capacity offered. Customers can be left confused about which line to stand in or what counter to go to when called and disturbed by the noisy crowded environment Yechiali, (1995). The common experience in Kenya is that most retail customer care shops do not have the adequate facilities and capacities in terms of work force to serve the large number of customers they receive without causing much delay on the part of the customers. The customers however, have always been desirous of spending the least possible time within the customer care shops seeking services however these desires. Agyei et al. (2015)

The factor used is the use of the facility or system. It was used since it shows the traffic intensity figures for the study organization. The system usage rate has some effect on the performance level of an organization. Organizational performance, according to Richard (2009), includes a number of distinct business outcomes, including (i) financial performance (profits, return on assets, return on investment, etc.); (ii) product (service) market performance (sales, market share, firm innovation, competitive advantage, etc.); and (iii) shareholder return (total shareholder return, economic value added, etc.).

According to Marek, Robert, Marcia, Blake, and Ahahinu (2009), the number of service channels used may have an impact on how long customers must wait in a system. Singh (2006)

asserts that increasing the level of service a facility offers will increase the cost of providing that service, while decreasing it will increase the cost of waiting for service. Therefore, management must weigh the two prices and come to a decision that would ensure the best possible level of service is provided. In order to influence an organization's performance level, one of the responsibilities of queuing theory is to attempt to determine how these costs might be lowered by modification to the mechanics of the design. Boxma and Asmussen (2009).

While some businesses utilize numerous concurrent queues, each with their own server, others employ a single pooled queue with numerous servers. The telecommunications industry, customer service settings, and hospitals commonly deal with numerous lines and multiple server queuing issues. In some circumstances, a single line of consumers entering the service station could guarantee greater performance, whereas a multiple line of customers might be preferable. In other words, depending on the situation, either the single queue or the multiple queue could be used. For many systems with many queues, it is possible to consolidate them into a single queue to reduce the number of queues and increase efficiency. A single queue with numerous servers might be more effective than parallel queues with the same number of servers. Pooling multiple queues appears to be advantageous in that no servers would likely be idle while waiting for customers to arrive at their queue when customers are still waiting on other queues, reducing the likelihood that resources would be wasted. It also gets rid of the unpleasant practice of hopping from line to line in an effort to get to the front of the speedier line. Singh, (2006).

Statement of the Problem
The financial situation at the moment of Nigeria's cashless policy is becoming worse; the competition is getting more competitive, along with the lengthening wait times faced by the many ATM stakeholders.

This suggests that analytical models based on a queuing theory have been used to tackle the waiting line challenge. The queuing theory makes use of mathematical models to calculate certain performance metrics in order to enhance the flow of individuals in the queues. (2015) Hannah Render, Stair & Hale. In waiting line systems, customers have to wait during the process to acquire products and services. Besides waiting times, there are three basic components in the queuing theory that characterized a waiting line system: the arrivals, the service mechanism and the queue discipline. In operations management, applying the knowledge in queuing theory can help the operation managers assess the customers' waiting experience and improve the flow of customers in the system Chinwuko, Daniel, Ugochukwu and Obiora (2014); Gumus, Bubou and Oladeinde (2017).

Although studies have conducted in the area of queuing system and performance, some studies suggested that, there is need to reduce the number of servers in the bank from four to three to reduce the idle time of the servers and also reduce the operation cost Nsude et al., (2017); Thomas, (2014) and similar result were put forth by Sundarapandian (2009).

Some studies conducted by other scholars revealed positive correlation between queuing system and performance Adamu, (2015); Damondhar and Shastraka, (2018); (Munirat et al. (2015); Nityangini and Pravin, (2016). Similar results were obtained by Shastrakar and Pokley, (2017) and Sushil et al., (2017) as well. Most of the studies neglected the managerial operating variables such financial performance, market performance and shareholder return as proxies for performance. The present study sets out to employ operating performance variables like profits, sales and total shareholder return to examine the experience with particular reference to Access bank plc, Uyo.

Objectives of the Study
The broad objective of the study is to determine the effect of queuing system has on the performance of Automated Teller Machine of Access bank in Uyo. Specifically, the study aims to achieve the following objectives:
1.   to analyze the effect between customer arrival on financial performance of Automated Teller Machine of Access bank in Uyo;
2.   to examine the effect between service discipline on market performance of Automated Teller Machine of Access bank in Uyo;
3.   to ascertain the effect between service mechanism on shareholder return of Automated Teller Machine of Access bank in Uyo.

Research Questions
1.   What is the effect of customer arrival on financial performance of Automated Teller Machine of Access bank in Uyo?
2.   Is there any effect of service discipline on market performance of Automated Teller Machine of Access bank in Uyo?
3.   How does service mechanism affect shareholder return of Automated Teller Machine of Access bank in Uyo?

Hypotheses
H_{o1}:   There is no significant effect of customer arrival on financial performance of Automated Teller Machine of Access bank in Uyo.
H_{o2}:   There is no significant effect of service discipline on market performance of Automated Teller Machine of Access bank in Uyo.
H_{o3}: There is no significant effect of service mechanism on shareholder return of Automated Teller Machine of Access bank in Uyo.

REVIEW OF RELATED LITERATURE

This section reviews the opinions of experts in the specific area studied and also in the broader area of the topic "Queuing system and performance of Automated Teller Machine of Access Bank". The review of the related literature is categorized in three broad headings of conceptual, theoretical and empirical review.

Queuing System

Danish telephone engineer A.K. Erlang started researching call congestion and wait times in the early years of the 20th century. Since then, queuing theory has developed considerably and been used in a wide range of institutions. Bode, (200l). A cost optimization model that seeks to minimize the sum of two costs—the cost of providing the service and the cost of waiting—can be used to apply the results of a queuing study. The biggest obstacle to providing cost patterns is the challenge of getting accurate estimates of the cost of waiting, especially when human behavior is a crucial component of the operation.

The definition of a queue given by Okeke (I996) is a group of objects awaiting servicing. When we discuss lines, the human effort is what comes to mind. When considering queuing systems, examples include machinery needing repairs, cars waiting for service, or people waiting in a line at a gas station. Queues change whether or not the actual line is visible since supply and demand are rarely equal at all times. A queuing system, in Dannenbring and Stair's estimation (2000), essentially consists of the following four elements: a power source or calling population that generates customers, one or more service facilities, along with a line showing how many customers are waiting to be served, make up a service scheme. When clients arrive at the service locations, they first assess the circumstances of the line before deciding whether or not to get in line. Some customers are discouraged by the length of the queue and therefore do not join the queue while some customers after waiting in the queue for a while become impatient and drop out of the queue. d. A queue discipline or service discipline according to which the customers are selected for service. The queue discipline indicates the decision rate for service. For example, in the campus refectories, students are usually served on a "first-come, first-served" basis. However, in a hospital emergency room, the service may be rendered on the basis of some medical priority.

Talia (2007) contends that the study of queues deals with quantifying the phenomenon of waiting in lines using measures of performance, such as average queue length, average waiting time in queue, average facility (system) utilization, cost of given level of capacity, probability that an arriving patient would have to wait. The focus of this study is facility (system) utilization.

Automated Queuing

In computer systems, queues are very common. This helps to calculate one or more service facilities from the server. When a client in the queuing scheme is served, he leaves however, if the system service is busy, then the customer goes into the computer waiting system directly. Smith and Kerbache (2017). According to Parimula and Palaniammal (2014) queue arises when demand exceeds the service provider's current ability to the extent where consumers are unable to provide immediate service on arrival. Over the years, the use of computer technology to automate delivery of service has grown in scope and depth. Examples of the emerging existence of computer-aided automation in the service sector include additional automated services including mini-state delivery, payment processing and business system automation (Marinkoric & Obradovic, 2015).

Uddin et al. (2016) explains that most companies offer queue management system for controlling queues of people in various situations and locations in the queue area. For a small space and quick flow, most of the methods used are manually employed. Automated queue management system, on the other hand, deals for a larger space and dynamic flow. They further state that there are two separate queue management systems have been developed EQC system-1 and EQC system-2. EQC system-1 show token number and service counter number while EQC system-2 shows the token number individually in each service counter with different displays.

A queuing problem occurs when the facilities' current service rate falls below the actual customer service rate. Studying how the lines form and how to manage them is called Queuing theory, in broader terms, queuing theory is concerned with the mathematical modeling and analysis of systems that provide service to random demands which examines every part of the waiting line to be served, including the process of arrival, operation, number of servers, number of system locations and number of customers. The first problems of queuing theory were raised, published and published by A.K. Erlang in 1909. The first congestion problems were in the beginning of 20th century. Mwangi and Ombuni (2015).

There are two types of queues, which are structured and unstructured queues. Structured queue is a queue in a fixed form and people that included are in predictable position. We can see this at supermarket paying counter and some other retail locations such as banks and post offices. This type of queue systems often being set up to manage ticket ranking for a service with identification and thus enable a stress-free waiting. Some of this system is planned reception by appointment or remotely rank allocation on Smartphone or through SMS. Whereas, unstructured queue is where people form a queue in unpredictable and varying locations and directions. This is often the case in some forms of retail, taxi queues, ATMs and at period of high demand Titarmare and Yerlekar (2018).

Queue Management Systems
Customer Flow Management controls customer flow and their experience from initial interaction to delivery of final service. There are many stages in the process, including pre-arrival, arrival, queuing or waiting, serving, post-serving and handling. A queue management system can be defined as the management of queues of people within retail such as supermarkets, customer care outlets or public sector such as airports. It can be either reactive through a system that can coordinate the current queue or proactive via the collection system of queue management statistics, so that patterns can be detected and predicted. Titarmare and Yerlekar (2018).

In a system involving clients arriving for a product or service, a waiting line exists, queuing occurs when the service is not immediate, and customers leave the queue once they are been served. The queuing theory lays the basis for discovering the right solution for queue management. Traditional queuing methods include linear queues where customers physically wait in line. It is also the most common method of waiting and handling queues. Linear queues have many variations: Single Queue Service Point (SQSSP) This variation provides clients

with a first-in-first-out model in the order in which they arrive. Multiple Queue Points (MQMSP) which provides customers with variation segments based on their service needs in order to differentiate those requiring longer service times from those with smaller requirements. Single Queue Multiple Service Points (SQMSP) that logically distribute services and prioritize customers to join the queue first. Ndung'u et al (2018).

For sustainable operational performance and success of any organization, Control of different capacities, such as financial capital, technical initiatives and information management, is considered to accelerate organizational competitiveness not only in the local context, but also in the global context. (Alhadid, 2016). According to Kwamboka (2016), organizational effectiveness can be influenced by the introduction of suitable technologies and companies can only succeed in the 21st century by implementing modern technology.

Theoretical Framework
Many theories have emerged to highlight the objective of the organization and how it should respond to its obligations. These are theories relevant to the study.

Queue Management Theory
Erlang developed queuing theory in 1909. The idea of queuing was first introduced in the context of telephone traffic. A branch of probability theory called queuing theory is used to explain the more intricate mathematical models for waiting in lines or queues. According to queuing theory, the various kinds of queuing processes that exist in real-world settings are described using queuing models. The models enable the cost of service and the waiting time to be balanced in an acceptable way. Queuing models are used in a wide variety of situations in engineering, operations research, and the medical field. Harris and Gross, (1998).

A queue management system is the arrangement of queues of individuals within retail or public sector department. It can be either reactive through a scheme that can coordinate the current queue or proactive through the collection method of queue management statistics, so that patterns can be detected and anticipated. Individuals who enter the queue in a standing line queue are directly or issued with a ticket to the next location by the machine. Customers are taken out of the standing line queue with a ticket system, which will give customers convenience and less hassle as well as their turns are not ignored. Agyei et al. (2015)

Goal Setting Theory
In the 1960s, Edwin Locke advanced the goal-setting theory of motivation. According to this notion, the achievement of tasks is essentially tied to the formulation of goals. It states that setting clear, challenging goals and receiving proper feedback results in higher and better task performance. Edwin Locke and Gary Latham (1990) defined a goal as simply as what the person actively tries to do. Locke and Latham argue that the way one experiences one's value decisions is psychological. That is, one's principles produce a motivation to do things that are aligned with them. The theory of goal setting Locke & Latham, (1984) is based on the simplest of introspective insights, namely, purposeful intentional human actions. The interests of the individual govern it. Nonetheless, objective direction characterizes the behavior of all living

beings, including those of plants. The definition of goal-directed action is therefore not limited to conscious action. The goal setting theory predicts, describes and affects the job performance and satisfaction of an employee, according to the high-performance period, which causes the devotion of employees to the organization Latham & Locke (2007).

The idea of goal setting is integrated into a longitudinal high-performance loop, according to Yurtkoru et al. (2017), which offers a framework for better comprehending motivation. Job satisfaction influences organizational engagement, and job dissatisfaction leads to a reduction in employee engagement with the company. Organizational performance relies on individual performance or, in other words, its output will lead to organizational performance, which implies that the conduct of corporate participants, both individually and in groups, gives control over organizational performance because motivation will affect organizational performance Paais and Pattiruhu (2020). This theory was essential for this study since provides clear guidelines for measuring employee performance.

Review of Empirical Studies

In the course of studying related literatures, many researchers have examined queuing system and automated teller machine performance and have been able to arrive at certain findings. The researcher looks at the findings of others researchers in the field of management sciences, as it relate to queuing system with a view to criticizing or accepting their findings. Kiplagat et al. (2020). Carried out a study of National Cement Company Ltd in Kenya. The study aimed to determine the Influence of automated Queue Management System Optimization on the performance of National Cement Company Limited in Kenya. Data was collected using a questionnaire and interview guide among 105 staff of the company. Both qualitative and quantitative methods were used to analyse the data. The findings revealed that reliability and flexibility level; security level and staff training automated Queue Management systems positively influence the performance of the National Cement Company.

Peter and Sivasamy (2019) carried out a study on Queuing Theory Techniques and Its Real Applications to Health Care Systems - Outpatient Visits. The study focused on waiting times for patients within the OPD until their transfers to inner wards are long and the allocation to the wards. The study employed a randomized most idle routing algorithm. The algorithm appears to be fair as it chooses a server out of all idle servers at random and does not require any information on arrival rates to the system, pool sizes, or service rates at the time of rooting the decision. The study revealed that physical, psychological and emotional feelings that affect patient's perception on the waiting experience can be managed through better understanding of the techniques of Queuing theory and various measures associated with patients waiting time, then hospital managers can make decisions that have a beneficial impact on the satisfaction of all the stake holders. The study confirmed that Proper application of this effective management tool can yield impressive results.

Ahmed (2016) carried out a study on Automated Queue Management System. The study focused on the banks queuing system, different queuing algorithm approaches which are used in banks to serve customer and the average waiting time. The study utilizes two different queue

control systems where several processes undergo and is controlled by Intel Galileo Microcontroller that is software-compatible with the Arduino software development environment. The systems were then tested under different conditions to evaluate its performance. The study found out that the new approach of using automated queuing system to manage queues decreases the average waiting the time compared to the ordinary queuing system.

Agyei (2015) did a study on Modeling and Analysis of Queuing Systems in Banks. This study attempted to find the trade-off between minimizing the total economic cost (waiting cost and service cost) and the provision of a satisfactory and reasonably shortest possible time of service to customers, in order to assist management of the bank in deciding the optimal number of tellers needed. Data was collected through observations, interviews and by administering of questionnaire and was formulated as multi-server single line queuing model. The data was analyzed using both TORA optimization tools and descriptive analysis methods. It evaluated the performance assessments of various queuing systems. The study found that, in terms of average waiting time and overall economic costs, the use of the five-teller system was better than a four or six-teller system.

METHODOLOGY

This chapter outlines the procedures adopted to carry out the study. These include the research design, research area, population, sample size, sources of data collection, specification and decision rule.

Research Design
The research design adopted for this study was the survey research design. It was used because of the nature of the study. Survey research design enables the researcher to observe what happens to the sample subjects without manipulating them.

Population of the Study
The population of study comprise the service rate recorded for the five (5) working days of the study from the four (4) servers used by the bank of study. The total population is 1,326.

Sample Size and Sampling Technique
The framework for determining the sample size for this study was the average daily population of customers that visit the bank of each of the five days. Available records in the bank as at the time of study were used to compute the average daily population of customers visiting the bank. This was ensured by the application of queuing theory model. This was aided by tables.

Source of Data Collection
Observation method was used to collect data. The data recorded from what was observed by the researcher and two research assistants was used for the study

Specification of Model

The M/M/S (/FCFS) multi-server queuing model used in this study uses linear regression, and it is predicated that the arrivals would follow a Poisson probability distribution with an average of customers per unit of time. It is also assumed that they are served on a first-come, first-served basis by any of the ATMs. The service times are distributed exponentially, with an average of µ customers per unit of time and number of servers S (ATMs). If there are n customers in the queuing system at any point in time, then the following two cases may arise:

(i)   If n < S, (number of customers in the system is less than the number of ATMs), then there will be no queue. However, (S – n) number of ATMs will not be busy. The combined service rate will then be $\mu_n = n\mu$; n < S

(ii)   If n ≥ S, (number of customers in the system is more than or equal to the number of ATMs) then all ATMs will be busy and the maximum number of customers in the queue will be (n – S). The combined service rate will be $\mu_n = S\mu$; n ≥ S.

Method of Data Analysis

Both descriptive and inferential statistics were used to analyze collated data. These include: frequency, mean, rank, Pearson product Moment Correlation and Linear multiple regression.

Decision Rule

Reject the null hypothesis, if the p – value is less than the level of significance, accept the null hypothesis if otherwise. The rejection of the Null hypothesis shall be based on the P – value as the null hypothesis is rejected of P-value 0.05.

Hypothesis One
Table 4.4 Regression Result for Hypothesis One

Variable	Beta(β)	t-Stat.	P-value	Remark	R^2	Adjusted R^2	F-stats
Constant	4.298				0.297	0.290	41.472 (p-value 0.000)
		6.760	.000				
CUSTOMER ARRIVAL	0.545	6.440	.000	Significant			

Source: Researcher's Computation (2023)

The regression result in Table 4.4 shows that the model has an R-squared value of 0.297 which indicates that 29.7% of the variance in the financial performance can be explained by the customer arrival to Access bank in Uyo. The adjusted R-squared value of 0.29 indicates that the independent variable, customer arrival, has a positive relationship with the dependent variable, financial performance. The ANOVA shows that the regression model is significant (F = 41.472, p <0.05), indicating that the independent variable, customer arrival, has a significant effect on the dependent variable financial performance. The coefficients show that the regression coefficient for customer arrival is 0.545, with a p-value of 0.000. This suggests that for each unit increase in customer arrival, the financial performance of Access Uyo is expected to increase by 54.5%. The results indicate that there is a significant positive

relationship between customer arrival and the financial performance of Access Bank in Uyo. Therefore, we reject the null hypothesis that there is no significant effect of customer arrival on financial performance of Automated Teller Machine of Access bank in Uyo and accept the alternate which is states that there is a significant effect of customer arrival on financial performance of Automated Teller Machine of Access bank in Uyo.

Hypothesis Two
Table 4.5 Regression Result for Hypothesis two

Variable	Beta(β)	t-Stat.	P-value	Remark	R^2	Adjusted R^2	F-stats
Constant					0.316	0.309	45.267
	6.225	8.317	.000				(p-value 0.000)
SERVICE DISCIPLINE	.562	6.728	.000	**Significant**			

Source: Researcher's Computation (2023)

The regression result in Table 4.5 shows that the model has an R-squared value of 0.316 which indicates that 31.6% of the variance in market performance can be explained by the service discipline of Access bank in Uyo. The adjusted R-squared value of 0.309 indicates that the independent variable, service discipline, has a positive relationship with the dependent variable, market performance. The ANOVA shows that the regression model is significant (F = 45.267, p <0.05), indicating that the independent variable, service discipline, has a significant effect on the dependent variable market performance. The coefficients show that the regression coefficient for service discipline is 0.562, with a p-value of 0.000. This suggests that for each unit increase in service discipline, the market performance of Access Uyo is expected to increase by 56.2%. The results indicate that there is a significant positive relationship between service discipline and market performance of Access Bank in Uyo. Therefore, we reject the null hypothesis that there is no significant effect of service discipline on market performance of Automated Teller Machine of Access bank in Uyo and accept the alternate which is states that there is a significant effect of service discipline on market performance of Automated Teller Machine of Access bank in Uyo.

Hypothesis Three
Table 4.6 Regression Result for Hypothesis three

Variable	Beta(β)	t-Stat.	P-value	Remark	R^2	Adjusted R^2	F-stats
Constant					0.281	0.273	38.259
	2.875	2.214	.029				(p-value 0.000)
SERVICE MECHANISM	.690	6.185	.000	**Significant**			

Source: Researcher's Computation (2023)

The regression result in Table 4.6 shows that the model has an R-squared value of 0.281 which indicates that 28.1% of the variance in shareholder returns can be explained by the service mechanism of Access bank in Uyo. The adjusted R-squared value of 0.273 indicates that the independent variable, service mechanism, has a positive relationship with the dependent variable, shareholder returns. The ANOVA shows that the regression model is significant (F = 38.259, p <0.05), indicating that the independent variable, service mechanism, has a significant effect on the dependent variable shareholder returns. The coefficients show that the regression coefficient for service mechanism is 0.690, with a p-value of 0.000. This suggests that for each unit increase in service mechanism, the market performance of Access Uyo is expected to increase by 69%. The results indicate that there is a significant positive relationship between service mechanism and shareholder return of Access Bank in Uyo. Therefore, we reject the null hypothesis that there is no significant effect of service mechanism on market performance of Automated Teller Machine of Access bank in Uyo and accept the alternate which is states that there is a significant effect of service mechanism on shareholder of Automated Teller Machine of Access bank in Uyo.

DISCUSSION OF FINDINGS

Customer Arrival and Financial Performance

The findings of the hypothesis test provide valuable insights into the relationship between customer arrival and the financial performance. The results suggest that customer arrival have a significant positive impact on the financial performance.

The R-squared value of 0.297 indicates that approximately 29.7% of the variability in the financial performance can be explained by customer arrival. While this may seem relatively small, it is still a noteworthy proportion considering the numerous factors that influence financial performance in Access Banks. The adjusted R-squared value of 0.290 further supports this relationship, indicating that the inclusion of customer arrival as an independent variable improves the model's explanatory power.

The ANOVA results demonstrate that the regression model is significant, with an F-value of 41.472 and a p-value less than 0.05. This implies that the independent variable, customer arrival, has a statistically significant effect on the dependent variable, financial reports. This finding provides strong evidence to support the hypothesis that customer arrival enhances the financial performance of Access Bank in Uyo. The regression coefficient for customer arrival is 0.545, with a p-value of 0.007. This coefficient suggests that for each unit increase in customer arrivals, the financial performance of Access Bank in Uyo is expected to increase by 54.5%, after controlling for other variables in the model. This finding highlights the practical significance of having strong investigative accounting skills in improving the accuracy and reliability of financial reports. This finding is in line with the findings of the previous scholars that customer arrival has positive impact on financial performance.

Service Discipline and Market Performance

Based on the results of the analysis, the null hypothesis that service discipline does not significantly enhance the market performance of Access Bank in Uyo was rejected. Instead, we accept the alternative hypothesis, which states that service discipline indeed enhances the market performance of Access in Uyo. These findings have important implications for commercial banks and their stakeholders. The results suggest that investing in the development and utilization of service discipline can lead to improved market performance. This, in turn, can enhance transparency, accountability, and overall trust in the banking sector. Additionally, regulatory bodies and policymakers may consider incorporating guidelines and training programs that promote the application of service discipline among bank employees.

Furthermore, the finding that service discipline explains 31.6% of the variance in market performance supports existing literature that acknowledges the need for quality service delivery. The study's findings also contribute to the literature by providing empirical evidence within the context of commercial banks in Nigeria.

Service Mechanism and Shareholder returns in Access Bank, Uyo

The findings of the test of hypothesis provide valuable insights into the relationship between service mechanism and the shareholder returns of Access Bank Uyo. The results indicate that service mechanism have a significant positive impact on the shareholder return of Access Bank, Uyo. The R-squared value of 0.281 suggests that 28.1% of the variability in the shareholder return is explained by service mechanism. The adjusted R-squared value of 0.273 further supports the positive relationship between service mechanism and the shareholder returns. This value represents the proportion of variance explained by the independent variable while adjusting for the number of predictors in the model. The ANOVA results indicate that the regression model is significant, with an F-value of 38.25 and a p-value less than 0.05. This implies that the independent variable, service mechanism, has a statistically significant effect on the dependent variable, shareholder returns. This finding is consistent with previous empirical literature that highlights the positive impact of service mechanism on shareholder return.

The regression coefficient for service mechanism is 0.690, with a p-value of 0.000. This coefficient indicates that for each unit increase in service mechanism, the shareholder returns of Access Bank in Uyo is expected to increase by 69%, after controlling for other variables in the model.

SUMMARY OF FINDINGS

i. The study finds a significant positive impact of customer arrival on the financial performance of Automated Teller Machine of Access Bank in Uyo.
ii. Approximately 29.7% of the variability in financial performance can be explained by customer arrival.
iii. The adjusted R-squared value of 0.290 indicates that including customer arrival as an independent variable improves the model's explanatory power.

iv. The regression coefficient suggests that for each unit increase in customer arrivals, the financial performance of Access Bank in Uyo is expected to increase by 54.5%.

v. This finding highlights the practical significance of having strong investigative accounting skills to improve the accuracy and reliability of financial reports.

vi. The null hypothesis that service discipline does not significantly enhance market performance is rejected. The study accepts the alternative hypothesis, indicating that service discipline indeed enhances the market performance of Access Bank in Uyo. The findings support existing literature that emphasizes the importance of quality service delivery.

vii. Regulatory bodies and policymakers are recommended to consider incorporating guidelines and training programs to promote service discipline among bank employees.

viii. The study reveals a significant positive impact of service mechanism on the shareholder returns of Access Bank in Uyo.

ix. Approximately 28.1% of the variability in shareholder returns can be explained by service mechanism.

x. The regression coefficient suggests that for each unit increase in service mechanism, the shareholder returns of Access Bank in Uyo are expected to increase by 69%.

CONCLUSION

In conclusion, this study sheds light on the important relationships between customer arrival, service discipline, service mechanism, and the financial and market performance of Automated Teller Machine of Access Bank in Uyo. The findings demonstrate that customer arrival has a significant positive impact on financial performance, highlighting the practical significance of strong investigative accounting skills. Additionally, investing in service discipline can enhance market performance, transparency, accountability, and overall trust in the banking sector. The study also confirms the positive relationship between service mechanism and shareholder returns, emphasizing the importance of quality service delivery. These findings offer valuable insights for the banking sector, suggesting strategies for improving financial performance, market performance, and shareholder returns. By considering and implementing the recommendations of this study, stakeholders can work towards a more robust and successful banking environment in Uyo.

Recommendations

Based on the findings and conclusions of the study, the following recommendations can be made:

i. Enhance customer service and experience: Given the significant positive impact of customer arrival on financial performance, it is important for Access Bank in Uyo to prioritize customer service and create a positive customer experience. This can be achieved by training employees to provide excellent service, improving response times, and implementing customer feedback mechanisms.

ii. Invest in service discipline: The study highlights the positive relationship between service discipline and market performance. Access Bank should invest in developing and utilizing service discipline among its employees. This can involve creating guidelines and training

programs that emphasize professionalism, ethical behavior, and the delivery of high-quality services.

iii. Strengthen investigative accounting skills: The practical significance of strong investigative accounting skills in improving the accuracy and reliability of financial reports cannot be overstated. Access Bank should focus on enhancing the expertise of its accounting and finance teams through training and professional development programs. This will help ensure that financial reports are reliable, transparent, and meet regulatory standards.

iv. Incorporate service mechanism in strategic planning: The study establishes a positive impact of service mechanism on shareholder returns. Access Bank should integrate service mechanism considerations into its strategic planning processes. This involves identifying key service metrics, setting targets for improvement, and regularly monitoring and evaluating ATM performance to ensure continuous enhancement of service quality.

v. Collaborate with regulatory bodies and policymakers: Given the implications of service discipline and market performance for the banking sector as a whole, Access Bank should collaborate with regulatory bodies and policymakers to develop industry-wide guidelines and training programs. This will foster a culture of service excellence, accountability, and trust across the sector.

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