



## Effects of waiting line management on customer satisfaction: A Study of selected banks in Ogoja, Nigeria

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### Abstract

The objective of this study was to investigate the effects of waiting line management on customer satisfaction, using specific selected banks in Ogoja, Nigeria. The study aimed to assess how expected waiting time and the waiting environment influence customer satisfaction in these banks. A cross-sectional survey design was employed for this research. The target population included 44 management staff from the selected banks and all customers who visited during the hours of 8:30 a.m. to 4:00 p.m. over a month chosen by the researchers. A purposive and stratified sampling technique was utilized, with the Topman formula applied to determine the sample size. Data were collected using a well-structured questionnaire. Analysis of the data was conducted using multiple linear regression with SPSS 27.0. The regression results indicated a significant positive correlation between expected waiting time and customer satisfaction ( $\beta = 0.469$ ,  $p < 0.001$ ,  $t = 3.012$ ). Additionally, the analysis showed a significant effect of the waiting environment on customer satisfaction ( $\beta = 0.450$ ,  $p = 0.003$ ,  $t = 3.040$ ). Based on these findings, the study recommended that the selected commercial banks invest in providing accurate information to customers, which could help reduce their expected waiting times.

**Keywords:** Waiting Line Management, Queuing Theory, Customer Satisfaction, Waiting Time, Waiting Environment, Queuing psychology theory.

## Introduction

Like many sectors within the service economy, the banking industry operates in a highly competitive and dynamic environment. Numerous financial institutions have adopted customer-focused strategies to retain and grow their customer base (Ogunnaike et al., 2020; Ojo, 2018; Ayo et al., 2019). To achieve these objectives, bank managers must consider not only the financial figures reflected in clients' bank statements but also the collaboration between marketing and accounting departments, which is essential for effective account servicing. In this context, this paper aimed at investigating the effects of waiting line management on customer satisfaction in selected banks in ogoja, Nigeria.

## Background to the study

For bank employees as well as their clients, the length of time consumers spend waiting in lines causes great anxiety. "Waiting time" explains the length clients patiently wait before getting suitable services from a financial organisation (Bashir et al., 2021). Any service organisation will have some waiting; this calls for efficient queue management. Inadequate handling of this waiting time based on knowledge that time is money might cause consumer discontent. Customers who cannot get instant assistance might find themselves waiting in queues ranging in length from few minutes to many hours. Usually, consumers want not to feel hurried into utilising a service. Many times identified as a main determinant of their service purchase decisions is their need for efficiency and convenience (Ibrahim et al., 2020). Regular congestion in banking halls causes customer discontent and attrition

when people search for banks offering faster services and less waiting times. The main cause of discontent among Bank clients (Ogunnaike et al., 2020) is too long waiting times.

Given the possible influence of views of these times on brand loyalty, properly managing consumer's time is very vital (Bashir et al., 2021; Ibrahim et al., 2020). Customers' opinions on timely attention can improve loyalty and inspire repeat business under suitable circumstances. Organisations have to use good techniques for controlling perceived waiting time (PWT) if consumer discontent with service length causes financial losses (Ojo, 2018). Studies by Udayabhanu, Kekre, and Srinivasan (2018) show that never perfect is the outcome when one reaches a decent level of one hundred percent. Using the Economic Order Quantity (EOQ) model from inventory control, they devised an equation to determine the ideal use level of an M/D/1 queue.

This model helps optimize either the mean arrival rate or the realizable capacity to reach the desired utilization rate. According to Brahma (2017), queuing theory employs mathematical models and performance metrics to assess and improve customer flow through queues. Although queuing theory has applications in various fields, it is particularly relevant in the service sector. It has been utilized to evaluate customer wait times, employee productivity, working conditions, staffing levels, and waiting areas. The parallels between a queue and a waiting line where customers who cannot be served immediately must wait for extended periods and the economic principle that time equals

money make queuing theory especially applicable to managing such lines.

The problem of long queues in Nigeria banks had generated attention, measures have been taken to address the issue, the installation of more ATMs and E-Banking centers and the integration of internet and telephone banking. Despite these efforts, customers in Nigerian banks still report dissatisfaction when waiting for services, according to research (Bashir et al., 2021; Ojo, 2018). This suggests that there are significant flaws in the nation's financial practices. It is also important to emphasize that customer satisfaction levels and the formation of client expectations are greatly influenced by the service environment of these institutions. Currently, ensuring customer satisfaction is a crucial concern for all successful businesses and serves as a benchmark for others. Retaining customers is vital for business success, directly affecting organizational performance. To compete effectively in the global market, businesses need customers for revenue, resources, and the ability to target specific consumer segments (Ibrahim et al., 2020). The efficiency of queue management was assessed in respect to criteria including expected queue length and the waiting surroundings.

### **Problem of the study**

Business enterprises nowadays have come to understand that customers want not just high-quality service but also speedy response times (Ayo et al., 2019). Many businesses are including lines into their everyday operations due to financial and time restrictions, which usually results in consumers waiting for services. Sometimes one might interpret these lengthy queues as evidence of organisational

inefficiencies (Ogunnaike et al., 2020). Many consumer concerns about the wait-time practices of Zenith Bank Plc, Access Bank Plc, and First Bank Plc shaped the choice of these financial institutions for this study. The badly created service environment is one of the main obstacles financial institutions must deal with. Environmental signals include pleasant smells, music, lighting, and temperature (Bashir et al., 2021) clearly influence consumers' assessments of the quality of services. Empirical data indicates that customer loyalty and the quality of a certain service provider can be very influenced by their physical location and infrastructure. More especially, the design and furniture of a service area greatly influence future usage, client retention, and general service quality (Ibrahim et al., 2020). Recent events at a Nigerian bank (Mugisha, 2017) show how severely elements like these affect consumers' impressions of wait times and the layout of the bank's facilities. Observations exposed that one of the problems at the chosen banks is a bad waiting area. The banking hall often lacks sufficient space to accommodate the number of customers entering at any given time, leading to congestion, long queues, and customer dissatisfaction. In light of these challenges, this study aims to investigate the effects of queue management on customer satisfaction in selected banks in Ogoja, Nigeria.

### **Objectives of the study**

The main objective of this study was to examine the effects of waiting line management on customer satisfaction: a study of selected banks in Ogoja, Nigeria. The specific objectives were;

- 1) To examine the effect of expected waiting time on customer satisfaction in the selected banks in Ogoja
- 2) To determine the effect of waiting environment on customer satisfaction in the selected banks in Ogoja

### Research questions

This study was guided by the following research questions;

- 1) To what extent does expect waiting time affect customer satisfaction in the selected banks in Ogoja?
- 2) To what extent does waiting environment affect customer satisfaction in the selected banks in Ogoja?

### Hypotheses of the study

The following null hypotheses guided the study;

**H<sub>01</sub>:** Expected waiting time does not have a significant effect on customer satisfaction in the selected banks in Ogoja

**H<sub>02</sub>:** Waiting environment does not have a significant effect on customer satisfaction in the selected banks in Ogoja

### Literature Review

#### Conceptual framework

##### Concept of Waiting Time

The concept of waiting time, as defined by Kotler and Keller (2016), refers to the average duration that individuals must wait before receiving the services they have specifically requested from a service provider. Scholarly literature on psychology and business has identified various dimensions and categories of customer waiting time. It is essential to

recognize that both objective and subjective assessments play a role in evaluating wait time (Khan et al., 2020). Objective waiting time is measured quantitatively, allowing consumers to verify the actual length of their wait. Often referred to as expected waiting time (EWT), alternative waiting times highlight consumers' impressions of the length of time they perceive they have spent waiting for service (Maister, 1985). Although typically more importantly than actual waiting time in both markets, this study focusses on expected waiting time, which is viewed as a crucial element impacting consumer happiness. The length of the waiting time, the expected value of the service, the degree of anxiety experienced, certainty regarding expected wait time, engagement in other activities during the wait, reasons given for the wait, and the presence of companions were among the several elements Khan et al. (2020) listed could influence customers' evaluations of waiting time. Three phases define the waiting time: pre-waiting time, which comes before a customer is seated; in-process wait, which takes place during the service itself; and post-process wait, which results after the service has been finished (Khan et al., 2020). Regarding financial services, these stages comprise pre-waiting, in-process waiting during transactions, and post-waiting following transaction completion. Moreover, past studies have shown differences between low- and high-cost waiting conditions. While high-cost waiting implies major expenses, including delays in air travel compared to waiting at a restaurant, low-cost waiting refers to times when consumers pay little financial



or non-monetary expenses (Ibrahim et al., 2020).

In conclusion, Hwang and Lambert (2015) differentiate between normal delays and those considered unreasonable. Customer patience can be classified into acceptable waiting time, which is the duration consumers are willing to wait for service, and unacceptable waiting time, which is the duration viewed as excessive for a given service. In this study, the terms "waiting line" and "queuing line," as well as "waiting systems" and "queueing systems," are used interchangeably, alongside "waiting line management" and "queueing management."

### Concept of queuing characteristics

Various authors have analyzed and categorized the characteristics of queues, each proposing unique indicators. Malik and Belwal (2018) assert that a queuing system comprises three fundamental components. Noserk Jr. and Wilson (2017) have identified four key aspects of a queuing system: the arrival pattern, service pattern, queue discipline, and cost structure. According to Stevenson (2018), Krajewski, Ritzman, and Malhotra (2013), and Russell and Taylor (2016), four critical factors must be considered when designing an efficient call center: (1) the source of the calling population; (2) arrival and service patterns; (3) the number of servers or channels; and (4) queue discipline, which refers to the order of service or priority rule.

Taha (2019) noted that queuing systems possess five distinct characteristics: customer arrival pattern, service pattern, number of

servers, facility capacity, and patient serving order. Russell and Taylor (2016) utilized the four most commonly referenced components in their analysis.

#### 1) The Calling Population/Population

**Source:** A population may have either an infinite or finite resource base. An infinite-source scenario arises when the service capacity is insufficient to handle the potential number of customers, while a finite-source situation exists when the number of customers influences the arrival rate (Krajewski et al., 2013).

#### 2) Arrival and Service Patterns:

The arrival rate refers to how quickly customers arrive at the bank and need to be served. This pattern can be static or dynamic, influenced by the customer arrival rate and service facility. The inter-arrival time defines the customer's arrival process and can be random or deterministic. Often characterising this arrival process, the Poisson distribution shows whether arrivals are random or regular (Heizer & Render, 2017).

#### 3) Number of Servers or Channels:

The server refers to the physical component responsible for servicing clients in a queuing system. Various forms of service channels may be utilised, and the number of lines and the organisation of service facilities can define the service system. A single-channel system allows consumers to queue for service from one service point, whereas a multiple-channel system needs customers to go through

various service facilities sequentially, depending on the complexity of the service (Krajewski et al., 2013).

### Concept of Order of Service

Known also as Queue Discipline, the Order of Service is the methodical process used to decide which service or job is addressed first. Customers in a queue or queue are usually serviced first-come, first-served, claims Krajewski et al. (2013). Those who come first are attended to first, then those who arrive later, according to this shared queue discipline. Other approaches include the "last in, first out" approach, in which the most recent item is given top priority; the "random selection" method, in which an item is chosen at random from a pool; and the "predetermined schedule" approach, in which consumers are served in the sequence they are scheduled, independent of their arrival times (Russell & Taylor, 2016). Other approaches, such as priority rules, could also take into account the earliest due date (EDD) or the shortest estimated processing time (SPT) and might even incorporate a preemptive discipline, enabling a high-priority customer to stop the service of a lower-priority one (Krajewski et al., 2013).

### Addressing delays in waiting lines

Reducing waiting time especially the subjective wait times effectively is the key challenge in order to improve customer happiness and service quality delivery. The following acts might offer possible fixes for this problem:

- 1) Establishing a reasonable upper limit for the waiting time consumers go through comes first.
- 2) Using queuing theory will help to reduce wait times at the following level. This may be accomplished with several approaches including adding more service points, improving service capacity, using a reservation system, grouping consumers according to need, and changing demand. Pre-selling services made possible by a reservation system help to minimise lines, maximise efficiency, and guarantee enough supply of services. This system should be able to handle urgent needs, maybe by means of an escalated pricing approach. To meet immediate needs, one may also consider Collier's (2015) recommended concept of "express lanes" or premium expedited services.
- 3) Improving the Waiting Experience: At last, the best approach to help consumers who have to wait should be to guarantee a good and efficient experience. According to Saran et al. (2016), a comfortable setting with suitable temperature, cosy chairs, relaxing music, and entertainment choices is what should be present. Furthermore improving client experience whilst waiting is offering basic information about services and advertising further items.

### Strategies for managing customer waiting time

Several strategies can effectively manage customer wait times:

- **Employee Training:** Staff development is critical for providing quality service, especially frontline employees who interact directly with customers. Comprehensive training equips them to manage customer interactions, disseminate information, and resolve issues effectively.
- **Clear Communication:** Informing customers about expected wait times can help manage their expectations. If customers know they will wait for an extended period, they can plan accordingly.
- **Comfortable Waiting Areas:** Creating a tidy and aesthetically pleasing waiting area is essential. A comfortable environment reduces customer annoyance and contributes to a positive service interaction (Bitner, 1992).
- **Sufficient Seating:** Providing more chairs than needed can prevent customers from feeling crowded and improve their overall experience. Brahma (2017) emphasized that customers' satisfaction is influenced by their physical comfort during service delivery.
- **Engaging Activities:** Offering engaging activities such as reading materials or television can help occupy customers' time while they wait. Grönroos (2007) noted that service providers have options to address service failures, including apologies and assistance.

## Customer Satisfaction

Customer satisfaction is defined as the difference between a customer's assessment of their service experience and their expectations, which are largely shaped by prior encounters (Lee, 2019). Oliver (1999) argued that satisfaction depends on how well a company meets client expectations regarding service quality. Leisen and Vance (2007) suggest that service providers place significant emphasis on customer satisfaction due to its importance in maintaining client relationships. Research by Anderson, Fornell, and Lehmann (1994) indicates that satisfied customers are more likely to return, increase their purchase volume, and provide positive referrals.

Conversely, dissatisfied customers are more inclined to voice complaints (Zeithaml, Berry, & Parasuraman, 1996). Bloemer and Kasper (1994) found that satisfied customers tend to exhibit repeat patronage. Behaviors exhibited by customers while waiting can indicate their satisfaction with bank services. Customers displaying excessive impatience may abandon the queue, influenced by long waits or slow service delivery. Gross et al. (2007) noted that customers often feel discouraged and may postpone service requests if they anticipate long wait times.

## Relationship between waiting environments and customer satisfaction

Numerous studies have demonstrated a clear correlation between the quality of the waiting area and customer satisfaction. Factors such as comfort, spaciousness, and ambiance significantly influence customers' emotional states during their wait (Bielen & Demoulin, 2003). A pleasant environment can lead to

improved customer attitudes. Research by Ulrich, Nitschke, and Rammsayer (2004) suggests that individuals are more satisfied when in a calm setting and engaged in activities.

#### Relationship between expected waiting time and waiting time satisfaction

Many studies have shown a negative correlation between customer dissatisfaction and anticipated waiting duration (Khan et al., 2020). Customers at banks often estimate their expected wait times, and dissatisfaction arises when actual wait times exceed these expectations. It is commonly hypothesized that longer anticipated wait times correlate with negative interactions (Davis, 2008). However, individuals tend to report greater satisfaction when they have prior expectations about their waiting durations (Bielen & Demoulin, 2003). Overall, both the actual waiting experience and customers' expectations significantly influence their satisfaction levels.

#### Theoretical framework

This study was anchored the Queuing Psychology theory

#### **Queuing Psychology Theory**

Maister (1985) came up with a theoretical framework for queuing psychology that addresses perception and expectation management. He introduced the concept known as the "First Law of Service," which posits that customer satisfaction is determined by the difference between perception and expectations. Consumers will generally be more satisfied when the service provided meets or exceeds their expectations. To

encourage customer patience during waiting periods, two methods can be employed: focusing on customers' perceptions and managing their expectations (Khan et al., 2020).

Maister (1985) listed eight factors that organizations can leverage to influence customer satisfaction with waiting times. These include the perception that time spent single feels longer than time spent in company, the impact of anxiety on perceived wait duration, and the difference between unexpected delays and predetermined ones. Equally, the experience of waiting before a process begins can feel interminable. A positive correlation exists between perceived waiting time and fairness, with perceptions of longer wait times occurring when individuals wait alone for more expensive services compared to waiting in a group. Maister was among the first to quantify the duration of customer satisfaction before it shifts to dissatisfaction, establishing a framework that details when a more positive or negative outlook should be maintained based on the waiting experience. The widespread adoption of Maister's model can be attributed to its practical relevance, even if it is based on conjecture rather than empirical evidence (Bitner, 1992). This study relies on the premise that customer satisfaction is primarily influenced by perceived wait time rather than actual wait time.

#### Empirical Review

A study by Shamsuddeen, Muhammad, and AbdulAziz (2021) examined patient satisfaction with queue management during the COVID-19 pandemic at the Federal



Medical Centre in Gusau, Nigeria. The research involved a sample of 270 patients, with 268 questionnaires returned for analysis. Conducted from September to October 2020, the study investigated various factors affecting queue management, including waiting time, customer satisfaction, and the quality of the waiting environment. Regression analysis revealed that all three factors significantly impacted patient satisfaction, with waiting time negatively affecting satisfaction while service quality and the cleanliness of the waiting area had positive effects.

Using a probabilistic approach, Mittal and Sharma (2020) investigated patient COVID-19 waiting times. Using queuing theory to evaluate the waiting times of a multi-server system, their study created a new sequential queuing model to forecast diagnosis and treatment lengths at peak times. Their results showed waiting times for patients seeking COVID-related treatments to be logarithmic. At the Commercial Bank of Ethiopia, Alemu and Tewedros (2021) focused on customer satisfaction and examined how queue management techniques affected consumer behaviour. To compile information from consumers and operational managers, their research included surveys and statistical analysis conducted using STATA. Driven mostly by waiting times, the results showed that queue management improves customer happiness, implying that many consumers voiced discontent with present queue management techniques.

In Malaysia, a 2021 Johanudin et al. study on consumer impressions of fast food outlet waiting times Using SPSS, 205 of the 384 distributed questionnaires that were valid

were examined. The results showed that consumers' general happiness with fast food services was much impacted by their impressions of waiting times, therefore offering empirical evidence for the relationship between these factors.

Bakari, Chamalwa, and Baba (2021) investigated the use of queuing processes to enhance customer service delivery at Fidelity Bank Plc in Maiduguri. They collected data on customer arrivals and service times over ten consecutive workdays. The findings indicated a utilization rate of 95%, suggesting significant customer traffic and confirming steady-state functioning within the system.

Brahma (2017) conducted a comprehensive examination of queuing theory and its implications for patient satisfaction in hospitals. His research suggested that automated queuing technology could effectively monitor various parameters, including patient arrival times and waiting durations. The implementation of such technology is expected to improve the waiting experience by providing patients with estimated wait times and organizing service delivery more efficiently.

## Methodology

### Research Design

The researcher utilized a cross-sectional survey design to collect data at a single point in time from a representative sample of the population. This design facilitated a comparative analysis of customers' perspectives, opinions, and experiences regarding the management practices of waiting lines in the selected banks.

## Population of the Study

The target population for this study included the 44 management staff members of the selected banks, as well as all customers who visited these banks between 8:30 a.m. and 4:00 p.m. over a one-month period designated by the researchers.

## Sample and Sampling Techniques

The study employed a purposive sampling technique, allowing the researcher to select participants based on informed judgment. Using this method, 32 management staff members from the selected banks were chosen based on their availability. Additionally, a stratified sampling technique was implemented due to the heterogeneous nature of the customer population, which comprised all customers visiting the banks during the specified hours.

To calculate the sample size, the study applied the Topman formula, which is suitable for infinite populations. Ewah (2015) presented the formula as follows:

$$n = Z^2(P \times Q)$$

E2

Where;

n = sample size

Z = Standard deviation for desired level of confidence expressed in standard Z value as 1.96 (95%)

P = Estimate of expected population proportion having desired characteristics

Q = Estimate of expected population proportion not having desired characteristics

E = Error term (5%)

The researcher assumed P to be 85%. Therefore, the sample size is;

$$n = (1.96)^2 (0.85 \times 0.15) / (0.05)^2$$

$$= 3.8416(0.1275)$$

$$0.0025$$

$$= 0.4897$$

$$0.0025$$

$$= 196$$

The sample size is  $196 + 32 = 228$

## Method of Data Collection

Data from participants in this study was gathered using a carefully crafted questionnaire. Two parts comprised the questionnaire. While the second part concentrates on the impact of waiting queue management on customer satisfaction, the first section deals with demographic data of the respondents. Responses were scored on a five-point Likert scale as this is a well accepted approach for gathering research data that is quantitative and clearly understandable. The scale let for efficient study of the research topics by including choices ranging from Strongly Agree (SA-5) to Strongly Disagree (SD-1).

## Reliability and Validity of the Instruments

To ensure validity, the study employed face and content validity tests with the assistance of experts. This was necessary to ensure that the questionnaire items were well-structured in alignment with the study's objectives and that the grammatical expressions used were accurate.

On the aspect of reliability testing, the questionnaire was piloted with 15

respondents who were not included in the final study. The reliability was assessed using Cronbach's Alpha.

**Table 1: Reliability Test**

| Cronbach's Alpha | Number of Items |
|------------------|-----------------|
| .891             | 12              |

Source: Researcher's Field Survey, 2023.

The results in Table 1 indicate that the Cronbach's alpha value is 0.891, signifying that the questionnaire is reliable and suitable for the research.

#### Data Analysis Technique

The study utilized the Likert scale to collect quantitative data alongside demographic information for qualitative insights. The collected data were analyzed using multiple linear regression techniques, facilitated by SPSS version 27.0.

The t-test was employed to evaluate the study's hypotheses. The statistical significance of each variable's coefficient was determined using the t-statistic. This analysis involved comparing the t-statistic of each variable against a significance threshold of 5%. If the p-value of the t-statistic exceeded 5%, the null hypothesis was accepted. Conversely, if the p-value was less than or equal to 5%, the

hypothesis indicating that the variable does not have a statistically significant effect on the dependent variable was rejected.

#### Model specification

A multiple linear regression model was employed in this study. The functional model was written in explicit form as follows;

The model is shown below;

$$CS = F(EW, WE) \dots\dots\dots (1)$$

Where:

CS = Customer Satisfaction

EW = Expected Waiting Time

WE = Waiting Environment

In a regression form, it was:

$$CS_{it} = \beta_0 + \beta_1 EW_{it} + \beta_2 WE_{it} + \mu \dots\dots\dots (2)$$

$\beta_0$  = Constant Term

$\beta_1$  = Coefficient of Expected Waiting Time

$\beta_2$  = Coefficient of Waiting Environment

CS = Customer Satisfaction

$\mu$  = Error Term

#### Data presentation

Basically, the process of data collection involves the conversion of responses gotten from the questionnaire administered.

**Table 2: Response Rate**

| S/N | Option                                                    | Frequency | Percentage |
|-----|-----------------------------------------------------------|-----------|------------|
| 1   | Number of questionnaires properly completed and returned  | 200       | 88         |
| 2   | Number of questionnaires not properly filled and returned | 28        | 12         |
|     | Total                                                     | 228       | 100        |

Source: Fieldwork, 2023

The validity of survey results is contingent upon the extent of participation from

individuals within the target group. A total of 228 questionnaires were sent to individuals

employed in the banking industry as well as customers of these financial institutions. Upon careful examination of the data, it was determined that a total of 200 participants had successfully filled out a comprehensive and precise questionnaire. Mugenda and Mugenda (2003) claim that a response rate of 50% may be considered enough for

### Test of hypotheses

representing the sample, while a response rate above 70% is deemed excellent. Consequently, the study in question attained a sufficient level of response. The research's high response rate of 88% enhances the survey's administration and analysis, so bolstering its credibility.

**Table 3: Multi Co-linearity Test**

|                       | Co-linearity statistics |                                 |
|-----------------------|-------------------------|---------------------------------|
|                       | Tolerance               | Variance inflation factor (VIF) |
| (Constant)            |                         |                                 |
| Expected waiting time | 0.476                   | 2.100                           |
| Waiting environment   | 0.476                   | 2.100                           |

Source: SPSS Output, 2023

The presence of multi-collinearity may be deduced when the tolerance value is below 0.2 or 0.1, and the variance inflation factor (VIF) value is 10 or above. The absence of multicollinearity in the dataset is supported by

the observation that both tolerances exceeded 0.2 and the variance inflation factors (VIFs) were below 10. Hence, it is unnecessary to make any modifications to the analysis and we may continue accordingly.

**Table 4: Model Summary**

| Model Summary                                                      |       |          |                   |                            |               |
|--------------------------------------------------------------------|-------|----------|-------------------|----------------------------|---------------|
| Model                                                              | R     | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin Watson |
| 1                                                                  | .646a | .417     | .400              | .55628                     | 1.436         |
| Predictors: (Constant), expected waiting time, waiting environment |       |          |                   |                            |               |
| Dependent variable: customer satisfaction                          |       |          |                   |                            |               |

Source: SPSS Output, 2023

The adjusted  $R^2$  (coefficient of multiple determination) shows that 0.400 (40%) of variations in customer satisfaction account for variations in expected waiting time and waiting environment. The other 60% of the

variations in customer satisfaction is explained by other variables not mentioned in the study. Since the Durbin Watson statistics of 1.436 was less than 2, we conclude that there was no autocorrelation.

**Table 5: ANOVA**

| ANOVAa |                |    |             |   |      |
|--------|----------------|----|-------------|---|------|
| Model  | Sum of Squares | Df | Mean Square | F | Sig. |



|                                                                       |            |        |     |       |        |       |
|-----------------------------------------------------------------------|------------|--------|-----|-------|--------|-------|
| 1                                                                     | Regression | 14.839 | 2   | 7.419 | 23.977 | .000b |
|                                                                       | Residual   | 20.733 | 197 | .309  |        |       |
|                                                                       | Total      | 35.572 | 199 |       |        |       |
| a. Dependent Variable: customer satisfaction                          |            |        |     |       |        |       |
| b. Predictors: (Constant), expected waiting time, waiting environment |            |        |     |       |        |       |

Source: SPSS Output, 2023

Given that P-value of 0.000 which is less than 0.05, we conclude that expected waiting time and waiting environment has a significant

effect on customer satisfaction in the selected banks at 5% level of significance.

**Table 6: Regression Coefficients**

| Coefficientsa                                |                       |                             |            |                           |       |      |
|----------------------------------------------|-----------------------|-----------------------------|------------|---------------------------|-------|------|
| Model                                        |                       | Unstandardized Coefficients |            | Standardized Coefficients | t     | Sig. |
|                                              |                       | B                           | Std. Error | Beta                      |       |      |
| 1                                            | (Constant)            | .249                        | .473       |                           | 0.525 | .005 |
|                                              | Expected waiting time | .469                        | .142       | .412                      | 3.012 | .001 |
|                                              | Waiting environment   | .450                        | .148       | .411                      | 3.040 | .003 |
| a. Dependent Variable: Customer satisfaction |                       |                             |            |                           |       |      |

Source: SPSS Output, 2023

The model formulated in previously is substituted to become:

$$CSI_t = 0.249 + 0.469PWIt + 0.450WEIt + \mu$$

### Test of hypothesis one

**H<sub>0</sub>:** Expected waiting time does not have a significant effect on customer satisfaction in the selected banks in Ogoja

**H<sub>1</sub>:** Expected waiting time has a significant effect on customer satisfaction in the selected banks in Ogoja

The regression results revealed that expected waiting time had a significant and positive effect on the customer satisfaction as indicated by  $\beta_1=0.469$ ,  $p=0.001$ ,  $t=3.012$ . Based on this result, we reject the null hypothesis and accept the alternative hypothesis which that expected waiting time has a significant effect on customer satisfaction in the selected banks in Ogoja.

### Test of hypothesis two

**H<sub>0</sub>:** Waiting environment does not have a significant effect on customer satisfaction in the selected banks in Ogoja

**H<sub>1</sub>:** Waiting environment has a significant effect on customer satisfaction in the selected banks in Ogoja

The regression results further revealed that waiting environment had a significant effect on the customer satisfaction as indicated by  $\beta_1=0.450$ ,  $p=0.003$ ,  $t=3.040$ . Based on this result, we reject the null hypothesis and accept the alternative hypothesis which that waiting environment has a significant effect on customer satisfaction in the selected banks in Ogoja.

## Discussion of Findings

The result from the regression analysis indicated a significant positive correlation between the projected waiting time and customer satisfaction ( $\beta = 0.469$ ,  $p < 0.001$ ,  $t = 3.012$ ). This finding negates the results of a recent study conducted by Johanudin et al. (2021), which investigated customer perceptions of waiting time at fast food establishments in Malaysia. The study distributed, 384 questionnaires using a simple random sampling method, yielding 205 valid responses and a response rate of 53%. The statistical analysis conducted with SPSS included descriptive statistics, reliability and validity assessments, factor analysis, and correlation analysis. The results showed that consumers' perceptions of wait times significantly affect their overall satisfaction with fast food outlets, thus giving theoretical validation of the relationship between perceived waiting time and customer satisfaction in this context.

The regression analysis equally revealed a notable impact of the waiting environment on customer satisfaction ( $\beta = 0.450$ ,  $p = 0.003$ ,  $t = 3.040$ ). These findings supported the research conducted by Alemu and Tewedros (2021), which examined the effects of various queue management strategies on customer satisfaction at the Commercial Bank of Ethiopia. Their study objective was to explore the relationship between queue management and customer satisfaction, utilizing a methodology that included a question-and-answer format to gather primary data from customers and operational managers. The research made use of descriptive statistics and the STATA software to evaluate the data, addressing independent variables such as the

waiting area, customers' perceptions of wait time, familiarity with services, and the ability to maintain order in the line. The dependent variable, customer satisfaction, was found to be significantly influenced by the duration of waiting time prior to receiving assistance. The study concluded that a considerable number of clients expressed dissatisfaction with current queue management practices.

## Conclusion

The primary aim of this research was to investigate the effect of waiting line management on customer satisfaction in selected banks in Ogoja. The result indicate that expected waiting time and the waiting environment both have significant positive effects on customer satisfaction.

## Recommendations

Drawing insights from this study, the following policy recommendations are proposed:

- 1) **Investment in Information:** The focal point of study and other establishments should invest in providing accurate and timely information to clients. This can help reduce customers' expectations regarding waiting times.
- 2) **Improvement Strategies:** The banks should adopt strategies to enhance customer satisfaction, such as minimizing long waiting time, utilizing signage and signaling systems, fostering interactive communication, and providing entertainment and relaxation options, such as television advertisements, to engage customers while they wait.

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