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The Role of Queueing Discipline and Reneging in The Nigerian Banking Industry

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Abstract

Queue discipline is a significant predictor of the effects of queueing efficiency on customer reneging in the queue system. The kind of queueing discipline adopted by a firm if not favourable to customers could discourage present customers from switching from one bank to the other where there will be less queues and better service delivery. This has been supported by Previous academic research observed that the kind of queue discipline adopted by a firm will greatly influence the waiting time for some set of customers. Also, find out that if a customer is aware that an organization employs the last in first out queue discipline most customers will refuse to arrive in a queue system early and this will in turn affect the behaviour of customers to the organization and also the outcome of the queue itself, as arriving customers are constantly receiving service correspondingly. It becomes important to ascertain in the Nigeria commercial bank environment the influence of queueing discipline on customers reneging in queueing system. This research adopted Quantitative approach for the survey in the study. The sampling techniques used for this study is simple random sampling techniques. A total of 400 copies of the questionnaire were distributed to the university students who are clients of the four (4) commercial banks, but only 384 (384) were returned and determined to be usable for the analysis. The following descriptive and inferential statistical techniques were used: The data received from the distributed questionnaire was analyzed using Multiple Regression. Based on these findings and gaps it was recommended that Bank management should adopt a kind of queueing discipline that is free and fair to all customers such as the first in first out queueing discipline. Banks should also be able to adopt the use of a computerized reservation system that will also handle problems resulting from customers overbooking their service and also find ways to encourage customers to visit their banking hall during off peak period.

Keywords: Customer Reneging; Queue Discipline; Bank Environment; Banking Systems

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INTRODUCTION

Queueing disciplines are significant rules used in ascertaining the trend of offering service to customers in a queue in an organisation. The queueing discipline type adopted by an organisation can have an influence on the organization's whole performance. The number of customers in the queueing system of a bank, the average waiting time, the array of variability in waiting time, and the efficacy of the service facility are just a few of the features influenced by the decision of priority rules. Atkinson (2000) opined that the particular queue discipline used by a firm will greatly influence the waiting time for some set of customers. Also, find out that if a customer is aware that an organisation employs the last in first out queue discipline most customers will refuse to arrive in a queue system early and this will in turn affect the behavior of customers to the organisation and also the outcome of the queue itself, as arriving customers are constantly receiving service correspondingly. This is because every person has individual needs depending on interest and situation. Many authors also agreed that service experience is personal and complex, that more extensive research on how to design for the right experience is needed (Olaniyi, 2004). Managers of banks are faced with diverse choices of queueing structure ranging from single queue structure to multiple queue structure. This study adopted the use of queueing theory to support the findings in this research work. The queueing theory is otherwise known as the random system theory, which hypothesised the contents of the behavior of arrivals in a queueing system, the optimization problem and the statistical inference of queueing system.

Slow service rate resulting from the wrong choice of queue discipline can lead to queues in organisation; queue is volatile situations which give rise to unnecessary delay and affect negatively the customer perceived service effectiveness of an organisation (Eze & Odunukwe, 2015). In addition, Nigerian bank workers have been accused of partiality, bribery, favouritism and nepotism. Some customers are served on the basis of their relationship with the tellers (Adeoti, 2010). While they claim to adopt First-In-First-Out as their queue discipline, there are times when some customers are served without any basis for the use of priority discipline (Kandemir-Cauas & Cauas, 2007). With focus on the Nigeria banks, it is very important to determine the effects of queueing discipline on customer cycling in queue system. There is a growing demand from the customers for personalised banking services. Customers demand for efficient, convenient and fast service (Anichebe, 2013). Customers want a bank that will offer them services that will support their business goals however such demands by customers have not met adequately by the commercial system. It therefore becomes important to determine the effects of queue discipline on customers' reneging in queueing system within the Nigerian banking context.

LITERATURE REVIEW

Queue discipline is a significant predictor of the effects of queueing efficiency on customer reneging in the queue system. This is in congruence with the works of Isnaini et al., (2020) Josiane et al., (2012); Marbun et al., (2020); Nugroho et al., (2020); Utami et al., (2020) opined that last in first out-performs best for high traffic periods, and first in first out perform best for low traffic periods. The following are the forms of queueing discipline:

- A. Static queue disciplines are dependent on the customer's status as perceived by the organization in the queue. Few of such disciplines are:
 - i. First come first serve: Most likely the most commonly used priority rule is first come, first served (FCFS). This conditions that customers in queues waiting to be served are on the basis of their progressive arrival; no other features have any effect on the selection process. This is widely accepted as the balanced rule. A taxi queue at the

airports where a taxi is involved on a first-come, first-served basis is a type of this discipline.

- ii. Last-come-first-served (LCFS) – Customers are served in reverse order of arrival into the queueing system in this discipline, which means that those who join last are served first. Assume that documents to be processed for treatment in an office are piled up in a pile, with each new addition placed to the top. The secretary in the office might decide to treat these memos by taking each new task on top of the pile i.e. a just arriving memo will be attended to first. Similarly, the individuals who enter into an elevator last are the first ones to leave it.
- B. Dynamic queue disciplines are focused on the unique characteristics of the customers in line. The following are some examples of dynamic queue disciplines:
- i. Service in Random Order (SIRO)— Customers are chosen at random for service rendering, regardless of when they arrive in the systems. Every person in line is treated equally and will most likely be chosen. The customer's arrival time is taken into account.
 - ii. Priority Service—priority service rule consists of customers being grouped under priority groups on the foundation of some special characteristics such as service time, urgency or some special class of characteristics like the best customer in an organisation. Priority treatment is when VIPs are treated differently than ordinary clients in a bank.
 - iii. Emergency system – this is a priority service that allows a customer interpose a less important customer. This is often used in the hospital system where doctors leave regular patients to attend to more critical cases.

THEORETICAL FRAMEWORK

Queueing theory was applied in this research study. The queuing theory established a framework for the role of the service environment in the queuing model and consumer behavior in the service environment. It provides a broad understanding of the impact of parameters such as arrival distribution, service rate distribution, number of servers, and service facility, sometimes known as the service environment, on an organization's queue conditions and arrival behavior. The arrival to the system, queue discipline, and service rate are the three primary aspects that define the applicability of a queue model, according to Serhan, Robert, and Erol (2006). One of the assumptions of queuing theory is that when people enter a queueing system, they develop attitudes, such as reneging, walking, cycling, and jockeying. This has provided a foundation for interpreting client behavior while entering a banking hall based on the presence of the kind of queue discipline the banking system decides to adopt which will indirectly affect the customer behavioral pattern. Customers can either show patience by jockeying and cycling, or they can show impatience by reneging and balking in a queue.

HYPOTHESIS

H03: Queue discipline does not have any significant effects on customers' reneging in queuing system.

RESEARCH METHODS

The research study is descriptive in nature. The survey was conducted in a quantitative approach. The target population comprised of all the commercial banks in Nigeria. The sample size for the study is 400 respondents which are customers of the four commercial banks used in

the study. A structured questionnaire was used to collect data. Four hundred (400) copies of the questionnaire were administered to customers in the four selected commercial banks and three eighty four (384) of the questionnaire were retrieved. Data were analyzed with the use of Statistical Package for Social Sciences (SPSS). The hypothesis was tested using multiple regression.

RESULT AND DISCUSSION

Regression

Table 1: Model Summary of Queueing Discipline on Customers Reneging

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.103 ^a	.011	.008	.79060

Source: Researcher's Field Survey, 2016

a. Predictors: (Constant), Queue discipline

Summary of the model the model explains how much of the variance in the dependent variable (customer reneging) as shown in Table 1. In this situation, the R square is .011, which equals 1.1 percent when represented as a percentage. This means the model explains 1.1 percent of the variation in customer reneging levels.

The F-value is the Mean Square Regression (2.667) (see Table 4.9.3b) divided by the Mean Square Residual (0.738), yielding $F=3.613$. From the results, the model in the Table 4.9.3b is statistically significant (Sig =.000) and hence the null hypothesis should be rejected. Therefore, queue discipline has significant effects on customers' reneging at $F(1,338) = 4.267$. Hence, the alternative hypothesis is accepted.

Table 2. Coefficientsa of Queueing Discipline on Customers Reneging

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	T	Sig.
1	(Constant)	3.658	.055		66.370	.000
	Queue discipline	.024	.012	.103	2.066	.040

Source: Researcher's Field Survey, 2016

a. Dependent Variable: Customer Reneging

The Table 2, seeks to explain which of the variables is making a statistically significant unique contribution to the model looking at the sig column in the table; it reveals the strength of the contributions of the independent variable (queue discipline) to the dependent variable (customers' reneging). It contributed to the model in a novel and statistically significant way.

Decision: As a result, the null hypothesis is rejected. This finding implies that queue discipline has a considerable impact on bank clients' cycling patterns.

CONCLUSION

Firstly, from the theoretical findings, the queuing theory establishes a basis for the role of the service environment in the context of the queuing model and the customer behavior in a queuing system such as a banking hall. The three main characteristics that determine the suitability of queuing efficiency, according to Amar et al., (2020); Hakimah et al., (2019); Lubis et al., (2019); Nu'man et al., (2020); Pratama et al., (2019); Saragih et al., (2019); Sidonela et al., (2010), Utami et al., (2019) are arrival to the system, queue discipline, and service facility, implying that the components of queuing efficiency, such as arrival rate, service rate, queue discipline, and queue structure, will play a significant role

in improving the behavioural outcomes of customers in the queue system (Pratama, 2022; Patel et al., 2012; Wardhani et al., 2021). This was also supported by the empirical findings, which revealed that the queue discipline and customer renegeing have a strong relationship.

Secondly, findings from hypothesis three showed that queue discipline such as first in first out, last in first out, emergency and priority queue discipline have effects on customer renegeing behavior in a queue system. This implies that if any of the queue discipline types that best suits a bank is well applied to the service facility of the bank, the rate at which customers will come back to patronize a bank after being served will be very high. This is in congruence with the findings of Danilwan et al., (2020); Maggasingang et al., (2020); Pratama et al., (2020); Pratama et al., (2019); Saragih et al., (2020); Ushakumari and Devi, (2020); and Yuan and Lung (2014) that organisations with queue discipline that is perceived by customers as to be unfavorable makes it easier for customers to conclude that the organization queuing system is inefficient and these will reduce patronage. This also supports Nkrumah's (2014) and Sujianto et al., (2020) findings that modern banking employs queue discipline rules such as first come, first served, best customers first, high-profit customers first, and emergencies first, among others. Because each priority rule is distinct, it is critical to employ the priority rule that best suits the overall organization strategy and has the greatest impact on customer satisfaction.

The sort of queue discipline utilized in banks has an impact on customers' inclination to patronize the bank, according to this study. There are also notable proofs that these banks apply at least one of the queue discipline methods. Still, these banks are unaware of the types of queue discipline that best suit their banking operations and are also desired by their clients, which has an impact on consumer behavior.

LIMITATIONS AND RECOMMENDATION:

This research study was limited to the banking sector in Lagos Nigeria, which implies that these results may differ and vary in other sectors industries or companies. Although the conclusion of this study shows that queue discipline has a relationship with customer renegeing in a queueing system in a commercial bank the following are the recommendations derived from the study.

Using reservation systems and handling overbooking problems: Banks should endeavor to introduce reservation systems where customers can make reservations and bookings in relation to the service, they demand to be offered in which if a service is overbooked the system makes other reservations available for a less overbooked day. These reservation systems will be of great benefit to customers by reducing waiting time and also guaranteeing service delivery availability. The estimated opportunity cost of idle service capacity, as well as the expected cost of turning away bookings, would be reduced if an overbooking strategy were implemented.

Promoting off peak period: Searching for new sources of consumer demand leads to creative utilization of off-peak capacity. Bank executives should make an effort to market their off-peak hours by encouraging consumers to come in for large transactions at this time. The technique of encouraging off-peak periods can be utilized to discourage overcrowding at other times, resulting in faster service rates and better service delivery.

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