AN EMPIRICAL ANALYSIS OF EFFECTIVE CUSTOMERS SERVICE ON NIGERIA BANKS PROFITABILITY. (A QUEUING AND REGRESSION APPROACH)

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ABSTRACT  
This study investigates the impact of various elements of customer services adopted by some Nigerians banks to improve bank profitability in the Nigerian banking industry. It examines the mean profit and how each of the customer service elements adopted by the banks has impacted on the banks profitability and the level of impact of each of them. The study applies a pure quantitative analysis using five big Nigerian banks as a case study within a framework called the Queuing technique. Queuing Analysis revealed that the average time a bank customer spends waiting in the queue to carryout banking transaction has a linear relationship with the bank profitability. After the 2004 Nigerian banks consolidation and the recent failure of banks, leads to the study that examines the effectiveness of customer service on banks profitability. We found out that poor customer service management in banks may reduce banks profitability and thus may cause bank financial distress. However, the study also establishes that there is an inverse relationship between banks customers services and profitability in Nigeria banks.

Keywords: Customer service, Queue, Profitability, Financial distress, Average waiting time.

1. INTRODUCTION
The Nigeria banking industry was restructured in 2004/2005 which led to anarchy and loss of public confidence in the banking sector with an aftermath of the global financial meltdown in 2008/2009 and the nosedives of share prices. Effective customer service in banking is one of the most important ways to keep customers coming back despite of the huddles in the Nigeria banking sector. The strategies to maintain customers confidence includes responding to customers’ questions and complaints in a thorough and timely manner and interacting with customers through
face to face meeting, telephone, mail, fax and email. Above all, bank employees are involved in some aspect of customer service.

Washburn Financial Services explain that in increased competition, banks are required to become more and more customer-focused. It is very expensive to get new customers than to retain old customers. Keeping customers requires customer service staff in banks to be mature and intelligent. Banking has seized to be an entirely arm chair profession largely directed by conservative men who have been stripped of initiatives. In today’s world, banking is being shaped by innovative identification of the needs of the customers. Effective customer service is the process by which an organization delivers its services or products in a way that allows the customer to access them in the most efficient, fair, cost effective and humanly satisfying and pleasurable manner possible.

Therefore, the problem here is to use Queuing techniques to determine birth-death service process with a population consisting of customers in the banks either waiting for banking services or currently in the bank service. A birth occur when a bank customer arrives at the banking hall for business transactions, and a death occur when the bank customer finalizes his transaction and departs from the banking hall. In addition, to test the queuing assumption on first come first served basis. Against this backdrop, the objectives of the study are to empirically investigate the goal of Nigerian banks to meet the needs and expectations of various customers in order for them to increase their deposits and transactions leading to profitability. To outline the relevance of effective customer service to achievement of profit in banks. To list the elements of effective customer service as used in the selected banks. To rank the customer service elements in their degree of impact on the banks’ profitability. Furthermore, this study will be concerned with examining various elements of customer service developed by the banks in the last twelve years owing to competition which the bank have leveraged on to attain a profit position. Applying queuing analysis in the banking sector model is to permit forecasting of customer services on profitability, which is useful for both policy makers and the banking sector in general for formulating informed course of action.

In spite of the importance of banks as financial intermediaries, customer services and profitability modeling with the application of queuing techniques has not been in the mainstream of management research in Nigeria. Analyses of the banking sector have so far focused on theoretical assessment of growth trends and sectoral behaviour patterns in the industry. Discussion in those studies has, for instance, suggested a number of factors that may influence customer service in the banking sector, bank products and management. There have been no quantitative techniques model designed to measure banks customer service and its profitability and their possible linkages between the banking sector and the real sector of the economy. Since independence in Nigeria and the establishment of the Central Bank of Nigeria, no consensus has been reached by different Scholars as regards the impacts or correlations between customers services with banks profitability in Nigeria using queuing techniques.
2. REVIEW OF LITERATURE

Opinion differs among experts in banking and finance as well as the customer service professionals as to what constitutes effective customer services in the banking sector but they all agree that it is an age long issue for which there do not seem to be any consensus in sight. The issue of how to improve customer services to boost banks profitability has a long history in the banking sector. Some elements of customer service under this study include: appearance, attitude, attentiveness, tact, guidance, systems, flexibility, anticipation, communication, organization, convenient days and hours of operation, friendly tellers that are quick and knowledgeable with good communication skills, good listening skill and problem solving abilities. The importance of customer service in the Nigeria Banking system is absolutely essential for continuity in business and expansion given the competitive nature of banking services. Most successful business organizations have stated that the ability of providing an unbeatable customers services as sets them apart.

Pine and Gilmore (1998), Pine II and Gilmore (1999) were some of the first writers to address the notion of the customer experience. They postulated that services are becoming more commoditized and leading-edge companies are competing on experiences. The idea of Pine and Gilmore makes academicians, practitioners researchers to have a different perspective on customers service and experience.

(Carbone and Haeckel, 1994), postulated that the service a customer received or purchased come with an experience. Such a experience can be good, bad or indifferent. They further stress that services always come with an experience and that all service encounters provide an opportunity for emotional engagement, however mundane the product or service might be (Berry and Carbone, 2007; Voss and Zomerdijk, 2007).

(Shaw and Ivens, 2002; Voss, 2003; Prahalad and Ramaswamy, 2004b; Meyer and Schwager, 2007), have suggested that customer experience may provide a new means of competition. This can be noted in the way and manner in which the Nigerians banks nurtured their customers in service delivery. This done in other to retained old customers, get new customers and also increase profitability. The manner in which the Nigerians banks will increase profitability may be tailored towards the volume of transactions and turnover. This can influences expectations (Johnson and Mathews, 1997; Flanagan et al., 2005) and build confidence (Flanagan et al., 2005).

(Haywood-Farmer and Nollet, 1991), (Sampson and Froehle, 2006). Services are sometimes defined as something intangible, however many services also include some tangible elements (Johnston and Bryan, 1993). In banking sector, service may be the moment of truth (Normann, 2000). Generally any business that does not have a quantum of truth may experience liquidation in the short run. However, banking service in Nigeria is more than just bank cashier-customer interaction over the counter. The inability of the bank cashier to have true knowledge of the services rendered by the bank may infuriate the customer and thus may cause the customer not to carry out banking transactions with the bank.
Stuart and Tax (2004) argued that the customer experience can be enhanced by designing the service system to encourage greater active customer participation. Bate and Robert (2007) introduced an approach which involves customers in the design of the experience; experience-based design. Pickles et al. (2008) developed this methodology to demonstrate how three theoretical components of good design: functionality, engineering and aesthetics can be used as a framework to improve performance, safety and governance. There have not been models to link customer care service and banking activities.

As mentioned earlier, customer service means providing a quality product or service that satisfies the needs/wants of a customer and keeps them coming back. Good customer service means much more – it means continued success, increased profits, higher job satisfaction, improved company or organization morale, better teamwork, and market expansion of services/products. The model for customer service and bank profitability can be model thus:

Customer service = Accurate information + Zero service time.

Customer services activities that may boost bank profitability in Nigeria may include pleasant welcome address by banks staff to customers, smiling, good eye contacts, soft tone of voice, hand gesture, good telephone etiquette, this are simple customer service gesture with high business return.

Good customer service enables an organization to enhance its reputation among the customers. It helps the staff of an organization in problem solving and creating ability for multi-task in areas such as navigating complex databases and switching between different computers to find information for the caller. Hence it becomes an advantage for call centre employees in today’s workplace to have the ability to think quickly on their feet so they can deal quickly with involved information while working under pressure.

Customer service enables companies to earn the business of loyal customers and companies have three principles for wooing these loyal customers namely:

Listen to their desires: the importance of listening to their desires is often forgotten in a fast-paced environment. By listening to the customers, information gathered will be valuable commodity that will shape the course of the organization. The second principle is to create the services the customers demand. Listening to customers is a waste of time for an organization and its customers unless they act. Once customers’ desires are identified, it is time to build them on what they want.

Personalize products for each individual customer. Mass customization acknowledges that all customers are not alike and allows companies to cater to the specific needs of all its customers at prices that reflect mass production techniques. So organizations should learn how to customize and start dealing with large numbers of customers on an individualized basis.

Customer service orientation enables organizations to develop and motivate people to give quality customer service in line with their corporate objectives. Many businesses do not consider a downturn in business until it is too late. In a competitive environment, early plans need to be made so that the customer is always considered first. This can be done through regular reviews of systems and training program to look for ways in which existing processes can be improved.
By understanding what customer service means and how it impacts on turnover and bottom-line, businesses will not only enhance their reputation for providing quality service but be in a position to improve stale and tired internal services that will lead to increased customer loyalty and over time profit margins.

Many companies now produce literature which outlines their Customer Care Policy or Charter. This may include their policy on refund, warranties, after sales service and how to make a complaint. Customer service is very important part of any business organization. Small Business Articles, Ideas and Tips on the importance of good customer care made these submissions:

‘The last person to buy from you is the most likely to buy again and soon. This is true as many repeat sales come from existing customers. A repeat customer does not happen by accident. A repeat customer is the result of a relationship built through excellent customer service. ‘Care for your customers and they will return…care for your merchandise and they won’t.’

Importance of good customer care hinges on what are we doing to bring our customers back? When new customer comes on board our service, they will automatically receive a thank you email. The use of auto responders from this point onwards is critical in getting our message in front of our customers. Not only to sell to them but to keep in contact with them.

In 2011 the Central bank of Nigeria declared 5 banks in Nigeria as insolvent. One of the major problems of this financial distress of these banks can be traced to ineffective customer services. Before the establishment of Central Bank of Nigeria in 1958 there have been serious cases of Bank failures and unhealthy customer services in the Nigeria banking industry resulting to uncountable reasons of Bank failures.

3. DATA FOR THE STUDY

The data analysis of effective customers’ service on Nigeria banks profitability is based on the activities of five big banks in Nigeria. The five big banks are First bank of Nigeria, Zenith bank, Access bank plc, Guarantee bank and Union bank plc. The data were extracted for the daily activities of this bank taking into consideration the time a customer spending on the queue and the time the bank cashier spend in attending to the customer. The choice of the five Nigeria banks for this analysis is due to the banking activities and profitability of these banks.

3.1. Methodology

This applies queuing methodology based on the traditional determinants of the effect of customers transactions on banks in the banking sub-sector of the Nigeria economy distilled from the literature.

The followings are the Queuing Assumptions applied to this work.

- The arrival per unit of time follows a Poisson distribution probability
- Service times are follows an exponential distribution pattern.
- Queue discipline follows a birth and death process
- The mean arrival rate is less than the mean service rate.
\( \lambda \) → Mean arrival rate  
\( H \) → The mean service rate  
Average number of customer in the system  
\[
L_S = \frac{\lambda}{H - \lambda}
\]

Average number of customer in the queue  
\[
L_q = \frac{\lambda^2}{H(H - \lambda)}
\]

The Average time a customer spends  
In the system  
\[
W_s = \frac{1}{H - \lambda}
\]

The average time a customer spends waiting in the queue  
\[
W_q = \frac{\lambda}{H(H - \lambda)}
\]

The probability that the system is busy  
\[
P = \frac{\lambda}{H}
\]

The probability that the system is idle  
\[
P_0 = 1 - \frac{\lambda}{H}
\]

The Probability that the number of customers in the system is greater than \( k \), \( P_{nk} \)  
\[
P_{NSK} = \left[ \frac{\lambda}{H} \right]^{-K+1}
\]

Multiple - Channel Queuing Model  
\[
L_n = \frac{\lambda H \left( \frac{\lambda}{H} \right)^{k}}{(k-1)(KS-A)^2} P_0 + \frac{\lambda}{H} \frac{\lambda H}{L_s}
\]

\[
P_0 = \left( \frac{\lambda}{H S} \right) \quad \text{check on table i.e. probability of zero units in the system.}
\]

\( k \) = number of channels.  
\[
L_q = L_s - \frac{\lambda}{H} \quad \text{(}\text{eqn from multiple channel)}
\]

\[
W_s = \frac{L_s}{\lambda}
\]
\[
W_q = \frac{L_q}{\lambda}
\]

\[
P = \frac{1}{K_1 \left( \frac{\lambda}{H} \right)^k} \frac{kH}{kH - \lambda} P_0 \quad \rightarrow \text{Probability that Busy Service.}
\]

Model Specification for the Study:

MP = f (Ls + Lq +Ws + Wq + Po + P + K)

The above model is hereby written in log-linear form as:

(L) \( MP = bo + b_1 Ls(L) + b_2 Lq(L) + b_3 Ws(L) + b_4 Wq(L) + b_5 Po(L) + b_6 P(L) + b_7 K(L) + \mu \)

Model Coefficients: \( b_1, b_2, b_3, b_4, b_5, b_6, b_7 \)

where:

*MP* = Mean banks' profit and \( U_t \) = Captures other variable not included in the model and it takes care of other factors that cannot be observed or computed due to lack of data. \( U_t \) is referred to as error term.

### Table-1. Summary of Computer Spreadsheets of Data Analysis.

<table>
<thead>
<tr>
<th></th>
<th>Arrival Time</th>
<th>Interarrival Time</th>
<th>No. of People in a Queue</th>
<th>Departure Time</th>
<th>Service Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>13:50:00</td>
<td>0:00:00</td>
<td>2</td>
<td>1:51:00</td>
<td>0:01:00</td>
</tr>
<tr>
<td>2</td>
<td>13:51:00</td>
<td>0:01:00</td>
<td>3</td>
<td>13:53:30</td>
<td>0:02:30</td>
</tr>
<tr>
<td>3</td>
<td>13:53:00</td>
<td>0:02:00</td>
<td>3</td>
<td>13:55:00</td>
<td>0:02:00</td>
</tr>
<tr>
<td>4</td>
<td>13:54:00</td>
<td>0:01:00</td>
<td>4</td>
<td>13:55:00</td>
<td>0:01:00</td>
</tr>
<tr>
<td>5</td>
<td>13:55:00</td>
<td>0:01:00</td>
<td>3</td>
<td>13:56:00</td>
<td>0:01:00</td>
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<tr>
<td>6</td>
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<td>0:01:00</td>
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<td>0:00:45</td>
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<tr>
<td>7</td>
<td>13:57:00</td>
<td>0:01:00</td>
<td>0</td>
<td>13:59:10</td>
<td>0:02:10</td>
</tr>
<tr>
<td>8</td>
<td>13:59:10</td>
<td>0:01:10</td>
<td>1</td>
<td>13:59:40</td>
<td>0:00:30</td>
</tr>
<tr>
<td>9</td>
<td>14:00:00</td>
<td>0:00:50</td>
<td>0</td>
<td>14:01:00</td>
<td>0:01:00</td>
</tr>
<tr>
<td>10</td>
<td>14:01:00</td>
<td>0:01:00</td>
<td>0</td>
<td>14:03:00</td>
<td>0:02:00</td>
</tr>
<tr>
<td>11</td>
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<td>0:02:00</td>
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</tr>
<tr>
<td>12</td>
<td>14:03:00</td>
<td>0:00:00</td>
<td>3</td>
<td>14:05:00</td>
<td>0:01:00</td>
</tr>
<tr>
<td>13</td>
<td>14:04:00</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>14</td>
<td>14:04:00</td>
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<td>14:05:00</td>
<td>0:01:00</td>
</tr>
<tr>
<td>15</td>
<td>14:05:00</td>
<td>0:00:30</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>14:06:00</td>
<td>0:00:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>14:07:00</td>
<td>0:02:00</td>
<td>0</td>
<td>14:09:00</td>
<td>0:02:00</td>
</tr>
<tr>
<td>18</td>
<td>14:09:00</td>
<td>0:02:00</td>
<td>1</td>
<td>14:10:00</td>
<td>0:01:00</td>
</tr>
</tbody>
</table>
### Duration of Data Collection

<table>
<thead>
<tr>
<th>Mean</th>
<th>0:00:35</th>
<th>0:00:35</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>mean arrival time</td>
<td>=</td>
<td>0:00:44</td>
<td>seconds or 0.73333 minutes per customer</td>
</tr>
<tr>
<td>Arrival Rate</td>
<td>=</td>
<td>81.818</td>
<td>customers per hour</td>
</tr>
<tr>
<td>mean serving time</td>
<td>=</td>
<td>1.0667</td>
<td>minutes per customer</td>
</tr>
<tr>
<td>Service Rate</td>
<td>=</td>
<td>56.250</td>
<td>customers per hour</td>
</tr>
</tbody>
</table>

Duration of data Collection = 11hrs:33:0 min

mean arrival time = 1/m

arrival rate = m or 1/(mean arrival time).

**Source:** Authors Computation
Table 2: Summary of Computer spreadsheet of data analysis.

<table>
<thead>
<tr>
<th>Arrival Time</th>
<th>Interarrival Time</th>
<th>No. of People in a Queue</th>
<th>Departure Time</th>
<th>Service Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>00:00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00:00</td>
<td>01:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16:27:00</td>
<td>00:00</td>
<td>2</td>
<td>16:28:00</td>
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</tr>
<tr>
<td>00:00</td>
<td>01:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16:29:00</td>
<td>00:30</td>
<td>4</td>
<td>16:31:00</td>
<td>02:00</td>
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<tr>
<td>00:00</td>
<td>01:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16:30:00</td>
<td>00:00</td>
<td>1</td>
<td>16:31:00</td>
<td>01:00</td>
</tr>
<tr>
<td>00:00</td>
<td>01:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16:31:00</td>
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<td>3</td>
<td>16:32:00</td>
<td>01:00</td>
</tr>
<tr>
<td>16:32:00</td>
<td>00:00</td>
<td>3</td>
<td>16:32:30</td>
<td>00:30</td>
</tr>
<tr>
<td>16:34:00</td>
<td>00:00</td>
<td>3</td>
<td>16:35:00</td>
<td>01:00</td>
</tr>
<tr>
<td>16:36:00</td>
<td>00:00</td>
<td>6</td>
<td>16:37:00</td>
<td>01:00</td>
</tr>
<tr>
<td>16:37:00</td>
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<td>0</td>
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<td>03:00</td>
</tr>
<tr>
<td>16:37:00</td>
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<td>16:38:00</td>
<td>01:00</td>
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<tr>
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<td>16:44:00</td>
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<td>1</td>
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<td>01:00</td>
</tr>
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<td>16:48:00</td>
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<td>16:50:00</td>
<td>01:00</td>
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<tr>
<td>16:50:00</td>
<td>00:00</td>
<td>0</td>
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<td>01:00</td>
</tr>
<tr>
<td>16:36:00</td>
<td>00:38</td>
<td></td>
<td>16:37:00</td>
<td>01:06</td>
</tr>
</tbody>
</table>

Mean arrival time = 0:00:37 seconds or 0.61667 customers per hour minutes per customer
Arrival Rate = 97.297 customers per hour
Mean serving time = 1.1000 minutes per customer
Service Rate = 54.545 customers per hour
Duration of data collection = 8hrs:25min

Source: Authors computation

Table-3. Model Estimates

Modeling Log (MP) by OLS
Sample: 2002 – 2012

<table>
<thead>
<tr>
<th>Variable</th>
<th>Co-efficient</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log Ls</td>
<td>0.6772</td>
<td>3.4397***</td>
</tr>
<tr>
<td>Log Lq</td>
<td>0.1325</td>
<td>1.2558</td>
</tr>
<tr>
<td>Log Wq</td>
<td>0.2896</td>
<td>5.1303</td>
</tr>
<tr>
<td>Log Ws</td>
<td>0.6427</td>
<td>9.9551**</td>
</tr>
<tr>
<td>Log K</td>
<td>0.0137</td>
<td>0.0341</td>
</tr>
<tr>
<td>Log Po</td>
<td>0.5173</td>
<td>0.0004</td>
</tr>
<tr>
<td>Log P</td>
<td>0.5618</td>
<td>0.0013</td>
</tr>
</tbody>
</table>

F = 21.327    R² = 0.82
Adj. R² = 0.72 Prob. (F−Statistic) = 0.00000    Dw= 1.74

Schwarz information criterion 1.561

* Significant at 1% Level
** Significant at 5% Level
*** Significant at 10% Level

a = S. E. of regression

Source: Computed

4. RESULTS AND DISCUSSIONS

The thrust of the study was to investigate empirically the impact of customer services on the Nigeria banking industry, and to test for the validity of some conjectures that have been advanced for the impact of customer services in organizations profitability. The study was motivated by its importance and contribution to economic growth and development in the banking sub-sector of the Nigeria economy. There are some major findings that this study has revealed. These findings are:

I. The result of this study shows that the time a customer spent on the queue has a feedback effect on the bank profitability.

II. The time the cashier spent with the customers on the system follows a poison distribution. Thus the mean rate is also an important determinant of Bank profitability, although it is inversely related to the profitability of the banks in Nigeria which suggests that the rise in the mean rate, informed by a fall in an effective customer care service would tend to dampen bank profitability especially those customer service variables that requires some degrees of attention.

III. It can be seen that, the coefficients of the service rate that appears on the Lq has its theoretically predicted signs and are statistically significant. This result indicates that service rate increases profitability via inflow of transactions.
IV. The Duration of data collection is not correctly signed and is not statistically significant but may increase profitability via increase in bank transactions.

V. Lastly, other customer service variables not included on this analysis due to time spent by customer with bank cashier to obtain information may be used as proxy for politics in banks.

5. CONCLUSION

The aim of this empirical study is to investigate the impact of customer services on the Nigeria banks profitability. The study applies the Queuing analysis techniques and establish empirical support for some conjectures made in the literatures. Given the importance of customer services in any organization and the likely economic effects on banks’ growth and development, it becomes expedient to examine how Customer services in Nigeria banking sector can better be improved if attention is given to the time a customer spend waiting in the queue, the average time a customer spend with the cashier, the probability that the bank cashier is idle.

6. POLICY SUGGESTION

The use of Queuing analysis, help one to draw genuine inference and good bank customer service policies when it comes to time a customer spends in a queue for banking transactions. The findings from this empirical study help to formulate some policy issues which will aid management in planning customer care service in banks. Also knowledge of the underlying queuing variables is important if rational policy is to be implemented. Firstly, since volumes of transactions may determine profit, measure must be sustained to reduce the time a customer spend in a queue for banking service in order to increase transactions and thus increase profits. Secondly, for a developing country like Nigeria that is highly dependent on banking services daily, the time the cashier or customer care officer spends with a customer, plays a significant role in determining the next line of business for the bank. Finally, whatever customer services policy bank management embarks upon to increase profitability should be stable and thus considered the queuing variables.

REFERENCES


**BIBLIOGRAPHY**


