A Critical Assessment of Delay Factors and Effects on Productivity in Nigerian Ports Authority: A Case Study of Rivers Ports Complex

By

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Research Article

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ABSTRACT

This paper reviews the nature, characteristics, strategies, mode of operations, problems and attendant consequences of delay factors that has hampered the growth, development, productivity and operation efficiency of the port industry over years.

Delay factors have been in existence from the period of the pre-concession era to the post concession era. These factors have hampered the productivity of Nigerian ports, thereby preventing the ports from attaining its optimal performance. Even with the introduction of private terminal operators in 2006, even with increased infrastructural facilities by the terminal operators at the beck and call of port’s industry, in spite of this, there are still traces of delays in operations of the ports. This research is centered at identifying these delay factors, point out its causative factors, assess the attendant delay factors therein and the extent to which they have caused damage, using River port complex Port Harcourt as case study, the following delay factors were identified.

- Government policy inconsistency
- Lack of Infrastructural facilities
- Poor planning
- Port managerial problem
- Poor dredging
- Dock workers problem

It was observed that poor planning had the highest impact, followed by government policy inconsistency and infrastructural facilities while others had quite a significant impact on the productivity of the port. However, recommendations were made to help solve completely the issue of delays in the productivity of Nigerian ports.

Keywords: delay factors and effects, productivity, efficiency, Nigerian ports authority, rivers ports complex, and causative factors.

INTRODUCTION

Background Information

Nigeria is one of the maritime nations that are strategically located on the map, coupled with the coastal resources and population density. This has given our maritime industry an edge among other African countries and maritime nations; these have resulted to an ever-increasing number of vessels that call at the ports to meet with the economic demands of the country (NPA Statistics, 2012). In 1955, the marine department of the Nigerian Railway corporation was transformed into the Nigerian Ports Authority ACT of 1954 (Cap 155). NPA’s functions included the regulation of ports, piers and jetties, provision of pilotage services etc. since its inception there has been steady record of increasing growth of the ports given its vast maritime endowment.

The productivity of the Nigerian ports has continued to show positive prospects; productivity from the outset has been faced with bottlenecks and setbacks which hinder the ports from attaining its maximum productivity to yield the expected result or output. Nigerian ports have what it takes to achieve effectiveness and efficiency in its productivity, given the potentials of the ports (Ndikom, 2012). From the foregoing, there is no doubt that the maritime
seaport, especially the port system is vital and instrumental to the economic survival of a country thus the necessity for an assessment of the delay factors of port productivity in a port operational settings (Ndikom, 2008).

Delay factors are those situations or occurrences that hinder the successful completion or execution of an act. They are opportunities that present themselves due to loopholes of a port system. It occurs when proper attention is not given to vital issues that play a key role in port operations. These delay factors could be of any form. The productivity of a port worldwide is usually hampered by delay factors, which is peculiar to the port in question; in the case of Nigerian ports it is pertinent to note that before the past reform efforts of Government, Nigerian ports where grossly inefficient and ineffective and were plagued with all forms of vices and high level of corruption (Ihenacho, 2005).

Productivity, on the other hand is a measure of how efficient inputs are being used within the economy to produce outputs (Obigwe, 2010), port productivity and operational performance, to an extent are anchored on cargo through port (Ndikom, 2008), the relevance and efficiency of any port are tied to the degree of cargo traffic in viable heterogeneous maritime system which will aim at increasing port performance and productivity (Ndikom, 2008). Port productivity is the level of efficiency, effectiveness and vibrancy a particular port is operating at (Ndikom, 2006). The above mentioned is anchored on the nature of the operational settings of the port in question; the operational settings of a port is the working and environmental conditions put in place for port activities to take place, this serve as the basement on which port operations operate on. It is also aimed at seamless operations in a conducive environment which accelerate effectiveness and efficiency in port operations (Afolabi, 2012).

The purpose of this research is to assess the delay factors of port productivity in ports operational settings. It is noteworthy that the management and operations of the port’s industry has been left in the hands of managers who does not seem to understand the fundamental operational modalities of the system and this has really manifested into so many forms of problems resulting to unproductive and inefficient port system (Ndikom, 2012).

Problem Statement

Over the years, the port system has witnessed a lot of challenges occasioned by government policy inconsistency and other major factors that have ignited a lot of delays in ports operational modalities resulting to inefficiency and lack of productivity and also reflecting in some form of negative infectiveness of the port’s industry.

Port operation has played a significant role in the growth, development and the current transformational changes in the life and national economic revival of Nigeria. The essence of port restructuring process is to achieve expected efficiency and make our ports productive, user and investor friendly within the confines of its operational environment. Nigerian ports have witnessed some operational developments that negate the tenets of world maritime operational standards and modalities. To this end, the ports require fundamental reforms to shape and transform the entire system and provide services comparable to those of the advanced economies of the world (Ndikom, 2008).

Over the years, the sector reform and the ancillary services have become a major challenge faced by port managers all over the world, particularly countries undergoing economic restructuring or contending with financial problems (Ndikom, 2006). Observably, the private sector participation has not been impressive and foreign investments are marginal because of disincentives like high capital and debt-cost in the Nigerian financial markets (Ndikom, 2004). The fiscal reforms for the shipping and maritime subsectors are more lucrative in terms of tax concessions and have adopted a market-friendly policy to private concessionaires. Over a decade ago, government has initiated well-syndicated structural reforms in our ports due to lopsided malfunctioning of the system, culminating in serious fraudulent sharp practices and other operational difficulties that have affected efficiency and productivity of the ports (Ndikom, 2008).

The maritime industry is one that operates with clear-cut conventions, rules and regulations in conformity with international standards. Nigerian maritime industry has witnessed problems relating to operational inefficiency and policy inconsistencies. Government policy somersault have affected the port operations which also have affected operational performance (Ndikom, 2010).

Also, in the post-concession era the private companies who are leased to various terminals in the port lack legislative backing to invest fully in the ports, in as much as they operate on a Build, Operate and Transfer plan (BOT), there is need to provide a legislative backing on its investment owing to policy inconsistencies. From the foregoing, it will be noted that port productivity of Nigerian ports are occasioned by delay factors which are as follows:

- Government policy problem
- Lack of infrastructural facilities
- Port managerial problems
- Poor planning
- Poor dredging of channels
- Dock-workers, concessionaire problems
Also the post concession era, has brought about positive developments in our ports which has in many ways enhanced the productivity of Nigerian ports. But the existent structure of most Government agencies at the ports do not conform to post concession era, these structures are obsolete, therefore the need to reframe the system and structure of those agencies to conform to current situation at the port.

Other delay factors stated by Emeghara (2008) includes

- Inadequacies of berth
- Lack of cargo handling equipment
- Lack of manpower
- Administrative bottleneck
- Insufficient dept of the entry channels
- Too many public holidays and strikes.

These problems are of great concerns as they hinder optimal performance of ports in Nigeria.

Objectives

The aim of this research is to evaluate the delay factors of port productivity in ports operational settings, particularly Nigerian ports (Rivers port complex). The specific objectives of the study include the following:

A. To identify various delay factors of port productivity.
B. To evaluate the extent to which the delay factors has affected port productivity.
C. To evaluate the causes of delay factors to port productivity.
D. To proffer solutions and possible ways of preventing these factors to achieve optimal performance of ports.

Research Questions

In order to achieve the objectives of this research work, this study will attempt to provide answers to the following research questions as it affects port productivity.

A. Do delay factors affect port productivity?
B. How do delay factors affect port productivity?
C. What are the causes of delay factors to port productivity?
D. Were these delay factors in existence in the pre-concession era?

Hypothesis

Ho1: There is no significant relationship between delay factors and port productivity.
Ho2: There is no significant relationship between delay factors and port operational setting.
Ho3: There is no significant relationship between delay factors and port operational performance.

Justification of Study

This project work critically assessed the delay factors of port productivity in ports operational settings; it puts searchlights on the optimal performance of Nigerian ports. It will help the custodians of the port to actualize efficiency and optimal productivity. It will further address the operational inadequacies common in the post concession era. This study attracts the attention of the following audience:

i. Decision/ law makers
ii. Experts and stakeholders
iii. Elected officials and the public
iv. Port community
METHOD

Research Design: This is a cross sectional survey research design, which involve the use of questionnaire and oral interview which were adopted in this study using simple randomly sampling technique; a total of hundred respondents were drawn from the following shipping agents, NPA staffs, private terminal operator’s staff, shippers (Freight Forwarders, and dockworkers). The study used a correlation research method in order to examine the relationship between two or more variables at the point in time. The design was chosen because they provide an appropriate methodology for opinion and perception of the benefits accruable from the operators.

Instrumentation

A self-developed closed-ended 21 items questionnaire entitled “A critical assessment of delay factors and effects on productivity in Nigerian ports authority: a case study of rivers ports complex was developed and used for data collection. The questionnaire was structured to generate information with respect to research questions and hypothesis earlier stated. Content validity for the instrument was ascertained by technocrats and professionals within the maritime industry. The liability was ascertained using the test-retest method with an intervening interval of one week between the first and second administration of the questionnaire. The liability coefficient of 2.93 was obtained. Also the study used a correlation research method in analyzing its data which reflected 0.534, which is a critical value at 5% or 0.05 significance level.

Data Presentation and Discussion

TABLE 4.1: Showing the age distribution of respondents

<table>
<thead>
<tr>
<th>AGE</th>
<th>No of respondents</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>21-30</td>
<td>10</td>
<td>10%</td>
</tr>
<tr>
<td>31-40</td>
<td>56</td>
<td>56%</td>
</tr>
<tr>
<td>41-50</td>
<td>14</td>
<td>14%</td>
</tr>
<tr>
<td>50+</td>
<td>20</td>
<td>20%</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100%</td>
</tr>
</tbody>
</table>

Analysis of field survey, 2012

DISCUSSION

From the above table 4.1, 10% of respondents were between the ages of 21-30 years, 56% of respondents were between the ages of 31-40, 14% of respondents were between the age of 41-50 years, while 20% of respondents were 50 years and above. This means that the highest range of respondents were between the ages of 31-40 years. This simply means that the highest range was adult and less of young graduates of 21-30 years.

TABLE 4.1.1: Showing the sex distribution of respondents

<table>
<thead>
<tr>
<th>Sex</th>
<th>No of respondents</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>MALE</td>
<td>76</td>
<td>76%</td>
</tr>
<tr>
<td>FEMALE</td>
<td>24</td>
<td>24%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100</td>
<td>100%</td>
</tr>
</tbody>
</table>

Analysis of field survey, 2012

DISCUSSION

As presented in table 4.1.1 above, 76% of the respondents were male, while the remaining 24% were female. This indicates the dominance of male sex in the operations of the industry, thus the need for gender equality by way of increasing the employment of females into the maritime industry to balance the equation.
TABLE 4.1.2: Showing the occupation status of respondents

<table>
<thead>
<tr>
<th>OCCUPATION</th>
<th>No of respondents</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shipping company</td>
<td>20</td>
<td>20%</td>
</tr>
<tr>
<td>N.P.A staff</td>
<td>20</td>
<td>20%</td>
</tr>
<tr>
<td>Terminal operators</td>
<td>20</td>
<td>20%</td>
</tr>
<tr>
<td>Freight forwarders</td>
<td>20</td>
<td>20%</td>
</tr>
<tr>
<td>Dockworkers</td>
<td>20</td>
<td>20%</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100%</td>
</tr>
</tbody>
</table>

Analysis of field study, 2012

DISCUSSION

In table 4.1.2 above, we have 20% each of the respondents.

4.2 DATA ANALYSIS (TESTING OF HYPOTHESIS)

4.2.1 HYPOTHESIS 1
Ho: There is no significant relationship between delay factors and port productivity.
Ha: There is significant relationship between delay factors and port productivity.

Table 4.1.3

<table>
<thead>
<tr>
<th>Respondents</th>
<th>No</th>
<th>X</th>
<th>Y</th>
<th>XY</th>
<th>Y2</th>
<th>X2</th>
<th>T</th>
<th>T_cal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very well</td>
<td>1</td>
<td>10</td>
<td>45</td>
<td>450</td>
<td>2025</td>
<td>100</td>
<td>2.926</td>
<td>1.037</td>
</tr>
<tr>
<td>Average</td>
<td>2</td>
<td>6</td>
<td>10</td>
<td>60</td>
<td>100</td>
<td>36</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neutral</td>
<td>3</td>
<td>9</td>
<td>6</td>
<td>54</td>
<td>36</td>
<td>81</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not at all</td>
<td>4</td>
<td>4</td>
<td>10</td>
<td>40</td>
<td>100</td>
<td>16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>29</td>
<td>71</td>
<td>604</td>
<td>2261</td>
<td>233</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\[ \sum x = 29 \quad \sum x y = 604 \quad \sum x^2 = 233 \]
\[ \sum y = 71 \quad \sum y^2 = 2261 \]

Using product moment correlation coefficient

\[ r = \frac{N \sum xy - \sum x \sum y}{\sqrt{n \sum x^2 - (\sum x)^2} \sqrt{n \sum y^2 - (\sum y)^2}} \]

\[ R = \sqrt{\frac{4(604) - (29)(71)}{\sqrt{4(233) - (29)^2} \sqrt{4(2261) - (71)^2}}} \]

\[ R = \sqrt{\frac{2416 - 2059}{\sqrt{932 - 841} \sqrt{9044 - 5041}}} \]
Since the correlation coefficient is 0.5916, we conclude that, there is a perfect direct linear correlation between the two variables.

**TEST OF STATISTICS**

The test statistics is given as

\[ T = r \sqrt{\frac{n - 2}{1 - r^2}} \]

where \( r = 0.5915 \quad n = 4 \)

\[ t = \frac{0.5915}{\sqrt{\frac{4 - 4}{1 - (0.5915)^2}}} \]

\[ = 0.5915 \sqrt{\frac{2}{1 - 0.3498}} \]
\[ T = 0.5915 \sqrt{\frac{2}{0.6501}} \]

\[ T = 0.5915 \sqrt{3.076} \]

\[ T = (0.5915)(1.7539) \]
\[ T = 1.037 \]

Critical value

- Level of significance = 10%
- Degree of freedom = n-2
  \[ = 4-2 = 2 \]

\[ T_{0.1, 2} = 0.05, 2 \]
\[ = 1.05, 2 \]
\[ = 0.95, 2 \]

Decision rule

- If \( T_{\text{cal}} < T_{\text{tab}} \), reject \( H_0 \) and accept \( H_A \)

Decision

- \( T_{\text{cal}} = 1.037 \)
- \( T_{\text{tab}} = 2.9260 \)

Since \( T_{\text{cal}} (1.037) < T_{\text{tab}} (2.9260) \): we reject \( H_0 \) and accept \( H_A \) and conclude that there is a relationship between delay factors and port productivity.

4.2.2 HYPOTHESIS

- \( H_0 \): There is no significant relationship between delay factors and port operational settings.
- \( H_A \): There is significant relationship between delay factors and port operational settings.
Table 4.2.3.0

<table>
<thead>
<tr>
<th>Response</th>
<th>No</th>
<th>X</th>
<th>Y</th>
<th>XY</th>
<th>Y²</th>
<th>X²</th>
<th>T_{tab}</th>
<th>T_{cal}</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very well</td>
<td>1</td>
<td>15</td>
<td>26</td>
<td>390</td>
<td>676</td>
<td>225</td>
<td>2.9200</td>
<td>0.824</td>
</tr>
<tr>
<td>Average</td>
<td>2</td>
<td>10</td>
<td>22</td>
<td>220</td>
<td>484</td>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neutral</td>
<td>3</td>
<td>9</td>
<td>4</td>
<td>36</td>
<td>16</td>
<td>81</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not at all</td>
<td>4</td>
<td>12</td>
<td>2</td>
<td>24</td>
<td>4</td>
<td>144</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>46</td>
<td>54</td>
<td>670</td>
<td>1180</td>
<td>550</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\[
\Sigma x = 46 \quad \Sigma xy = 670 \quad \Sigma y = 54
\]
\[
\Sigma y^2 \quad \Sigma x^2
\]

Spearman’s product moment correlation coefficient is given by
\[
r = \frac{n \Sigma xy - \Sigma x \Sigma y}{\sqrt{\left( n \Sigma x^2 - (\Sigma x)^2 \right) \left( n \Sigma y^2 - (\Sigma y)^2 \right)}}
\]
\[
r = \frac{4(670) - (46)(54)}{\sqrt{4(550) - (46)^2(4(1180)-(54)^2)}}
\]
\[
R = \frac{2680 - 2484}{\sqrt{(2200 - 2116)(4720 - 2916)}}
\]
\[
R = \frac{196}{\sqrt{(84)(1804)}}
\]
\[
R = \frac{196}{\sqrt{151536}}
\]
\[
r = \frac{-196}{389.27}
\]
\[
r = 0.5035
\]
Since correlation coefficient is 0.5035, we conclude that, there is a perfect linear correlation between the two variables.
Test statistics

\[ t = r \frac{n-2}{\sqrt{1-r^2}} \]

\[ T = 0.5035 \sqrt{\frac{4-2}{1- (0.5035)^2}} \]

\[ T = 0.5035 \sqrt{\frac{2}{1-0.2535}} \]

\[ T = 0.5035 \sqrt{\frac{2}{0.7465}} \]

\[ T = 0.5035 \sqrt{2.6792} \]

\[ T = 0.5035 (1.6368) \]

\[ T = 0.824 \]

Critical value

Level of significance = 10% = 0.1

Degree of freedom \( n - 2 = 4-2 = 2 \)

\[ T_{0.1, 2} = 2.9200 \]

\[ 1 - 0.05,2 = 0.95, 2 \]

\( T_{\text{cal}} = 0.824 \)

Decision rule

If \( T_{\text{cal}} \) is < \( T_{\text{tab}} \) reject \( H_0 \) and accept \( H_A \)

Decision

\[ T_{\text{tab}} = 2.9200 \]

\[ T_{\text{cal}} = 0.824 \]

\[ H_0 \]

\[ H_A \]

Reject

Accept

reject
Since $T_{cal} (0.824) < T_{tab} (2.920)$, we reject $H_0$ and accept $H_A$ and conclude that there is a significant relationship between delay factors and port operational setting.

4.2.3 HYPOTHESIS III

$H_0$: There is no significant relationship between delay factors and port operational performance.

$H_A$: There is significant relationship between delay factors and port operational performance.

Using chi-square

Table 4.2.3.1

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
<th>N.P.A Staff</th>
<th>Shipping Company</th>
<th>Terminal operators</th>
<th>Freight forwarders</th>
<th>Dock workers</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>There is no significant relationship between delay factors and port operational performance.</td>
<td>Very well 10</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>10</td>
<td>44</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Average 6</td>
<td>9</td>
<td>7</td>
<td>8</td>
<td>5</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Neutral 2</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Not at all 2</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 4.2.3.2

Computation of expected frequency

$E_1 = 20 \times 44/100 = 8.8$

$E_2 = 20 \times 35/100 = 7.0$

$E_3 = 20 \times 12/100 = 2.4$

$E_4 = 20 \times 9/100 = 1.8$

$E_5 = 2 \times 44/100 = 8.8$

$E_6 = 2 \times 35/100 = 7.0$

$E_7 = 2 \times 12/100 = 2.4$

$E_8 = 2 \times 9/100 = 1.8$

$E_9 = 2 \times 35/100 = 7.0$

$E_{10} = 2 \times 32/100 = 2.4$

$E_{11} = 2 \times 9/100 = 1.8$

$E_{12} = 2 \times 35/100 = 7.0$

$E_{13} = 2 \times 12/100 = 2.4$

$E_{14} = 2 \times 9/100 = 1.8$

$E_{15} = 2 \times 35/100 = 7.0$

$E_{16} = 2 \times 44/100 = 8.8$

$E_{17} = 2 \times 35/100 = 7.0$

$E_{18} = 2 \times 35/100 = 7.0$

$E_{19} = 2 \times 9/100 = 1.8$

$E_{20} = 2 \times 9/100 = 1.8$

Expected frequency = total row x total column/ grand total

Table 4.2.3.3

<table>
<thead>
<tr>
<th>O</th>
<th>E</th>
<th>O-E</th>
<th>(O-E)^2</th>
<th>(O-E)^2/E</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>8.8</td>
<td>1.2</td>
<td>1.44</td>
<td>0.164</td>
</tr>
<tr>
<td>6</td>
<td>7.0</td>
<td>-1</td>
<td>1</td>
<td>0.143</td>
</tr>
<tr>
<td>2</td>
<td>2.4</td>
<td>-0.4</td>
<td>0.16</td>
<td>0.067</td>
</tr>
<tr>
<td>2</td>
<td>1.8</td>
<td>0.2</td>
<td>0.04</td>
<td>0.022</td>
</tr>
<tr>
<td>8</td>
<td>8.8</td>
<td>-0.8</td>
<td>0.64</td>
<td>0.073</td>
</tr>
<tr>
<td>9</td>
<td>7.0</td>
<td>2</td>
<td>4</td>
<td>0.571</td>
</tr>
<tr>
<td>2</td>
<td>2.4</td>
<td>-0.4</td>
<td>0.16</td>
<td>0.067</td>
</tr>
<tr>
<td>1</td>
<td>1.8</td>
<td>-0.8</td>
<td>0.64</td>
<td>0.035</td>
</tr>
<tr>
<td>8</td>
<td>8.8</td>
<td>-0.8</td>
<td>0.04</td>
<td>0.073</td>
</tr>
<tr>
<td>7</td>
<td>7.0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>2.4</td>
<td>0.6</td>
<td>0.36</td>
<td>0.150</td>
</tr>
<tr>
<td>2</td>
<td>1.8</td>
<td>0.2</td>
<td>0.04</td>
<td>0.022</td>
</tr>
<tr>
<td>8</td>
<td>8.8</td>
<td>-0.8</td>
<td>0.64</td>
<td>0.073</td>
</tr>
<tr>
<td>8</td>
<td>7.0</td>
<td>1</td>
<td>1</td>
<td>0.143</td>
</tr>
<tr>
<td>2</td>
<td>2.4</td>
<td>-0.4</td>
<td>0.16</td>
<td>0.067</td>
</tr>
<tr>
<td>2</td>
<td>1.8</td>
<td>0.2</td>
<td>0.04</td>
<td>0.022</td>
</tr>
<tr>
<td>5</td>
<td>8.8</td>
<td>1.2</td>
<td>1.44</td>
<td>0.164</td>
</tr>
<tr>
<td>7</td>
<td>7.0</td>
<td>-2</td>
<td>4</td>
<td>0.571</td>
</tr>
<tr>
<td>3</td>
<td>2.4</td>
<td>0.6</td>
<td>0.36</td>
<td>0.150</td>
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<tr>
<td>2</td>
<td>1.8</td>
<td>0.2</td>
<td>0.02</td>
<td>0.011</td>
</tr>
<tr>
<td>Total</td>
<td>0</td>
<td>17.18</td>
<td>2.909</td>
<td></td>
</tr>
</tbody>
</table>
Critical value
Level of significance = 10% = 0.1
Degree of freedom (DF) = (r-1) (c-1) 
= (4-1) (5-1) = (3) (4) 
DF=12
This critical value is $X_{0.1(12)}$
1-0.1= 0.90,12 from chi-square 
= 18.549
This means that $2.909 < 18.549$
Decision rule
: $X_{\text{cal}} < X_{\text{tab}}$
Decision / conclusion
: $X_{\text{cal}}$ is $< X_{\text{cal}}$ reject $H_0$ and accept $H_A$

Since $X_{\text{cal}}$ (2.909) < $X_{\text{tab}}$ (18.549), we reject $H_0$ and accept $H_A$ and conclude that there is significant relationship between delay factors and port operational performance.
Summary of Findings

1. There is a significant relationship between delay factors and port productivity.
2. There is a significant relationship between delay factors and port operational setting.
3. There is a significant relationship between delay factors and port operational performance.

CONCLUSION

This study on the assessment of delay factors of port productivity in ports operational setting has highlighted major delay factors affecting Nigerian ports, in particular Rivers port complex, which has greatly affected also the international trade which will necessitate increase growth in the nation’s economy. It was discovered that delay factors has a relationship with the productivity of ports in Nigeria (Rivers port complex).

There is need for consistency in government policies in the port which has greatly altered the potentials of Nigerian ports, also the need for managerial improvement, adequate dredging of channels, and proper planning of port services while also legally empowering the concessionaires in infrastructural facilities.

Also, other delay factors not mentioned in this research but demands attention include customs complexity in operations, proliferation of government agencies; it is noteworthy as part of policy inconsistencies by government, a group named save Nigerian freight forwarders, importers and exporters coalition (SNFFIEC) petitioned the federal government over some agencies that have come back to the port despite the sack order given to them by the federal government (Daily sun Newspaper , July 13, 2012).

Furthermore, other delays factors include piracy, security of waterways, transmission of RAR, delays in getting a pilot boat etc.

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