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Appraisal of Post Concession Seaports in Nigeria with an Insight to Growth Forecast

¹Shekwobagwu Paul Galadima
(galadimapaul11@gmail.com)

¹Damana Abubakar Ibrahim
(ibrahimdamana@yahoo.com)

¹Abdulmalik Muhammad Mustapha
(fadlulmalik@gmail.com)

¹Yusuf Ndagi Baba
(babayusuf89@gmail.com)

¹Department of Transport Management, IBB University Lapai, Niger State, Nigeria.

Abstract

The Nigerian maritime industry contributes significantly to the national economy through revenue generation. Over the years, major policy changes that affect performance of the seaports have been undertaken by the government in a bid to ensure efficiency that translates to increased revenue output generation. This study analysed some performance growth indicators such as port cargo throughput (PCT), gross registered tonnage (GRT) and the total number of vessels (TV), for Nigerian seaports from the millennial era, marked by a transition to sustained democratic government administration and consequent port reform afterwards. From the results obtained it was observed that the general performance of cargo throughput was deemed marginal and inconsistent throughout the study period of the time series with 24.53% being the maximum growth rate recorded between the period 2006 to 2007 of the post-reform era after concessions. However, a maximum annual port cargo throughput figure of 84,951,927 metric tons was recorded in the year 2014. By establishing an average benchmark figure of 39,078,043 metric tons for PCT in the current democratic dispensation, forecast throughput data for 10 years (2020 to 2029) was computed using an arithmetic progressive sequence.

Keywords: Throughput, Growth-rate, Reform, Efficiency, Forecast.

1. Introduction

Seaports today play a very important role in being gateways for international trade in many countries, both developed and developing ones. They are also used in measuring the economic wealth of a nation (Ogunsiji & Ogunsiji, 2011). The performance of ports has considerable influence on the trade indices and the capacity for economic development of nations underdeveloped. In Nigeria, the greater percentage of international trade is routed through the sea, and given her huge population, it is believed that the Nigerian economy may account for about 70% of all seaborne trade in the West African sub-region (Fivestar Logistics, 2008). To promote the development of the national economy, Chen (2003) suggested that it is essential for seaports to provide reliable, highly efficient and competitive services for their customers. In other words, an inefficient seaport will increase the transport cost of seaborne cargo, which will discourage international trade and have a



detrimental effect on the growth of the national economy. The increase in world trade over the last half century has triggered a focus on seaports by national governments to maximize economic prosperity through performance accruing from overall service delivery. In the 1950s and 1960s, many nations introduced institutional changes in port business, to coordinate port development at national and regional levels and prevent over-investment in expensive port infrastructure. For example, the United Kingdom established its National Ports Council for this purpose (World Bank, 2007).

By the late 1990s, the Nigerian ports which were under government ownership and operation become inefficient and costly. Hence a radical and holistic approach was undertaken by the federal government to privatize the ports through concession contracts. This was done by changing the institutional structure of the port business and allowing greater involvement of the private sector in the exploitation and financing of port facilities, terminals and services (World Bank, 2007). The institutional structure of the port business adopted was the “landlord model” which according to Bouchartat, *et al.* (2011), encapsulates the mode of management that brings a close relationship between the public interests and the private sector. At least 88% of the largest container terminals in the world, apply this model. Concessionaires are required to develop and maintain the infrastructure and provide the superstructure and equipment required for port operations (Bouchartat, *et al.* 2011). The port authority plays the role of a regulator and a provider of basic infrastructure as well as a conducive business environment for the private companies to run operations and deliver quality service. In essence, the government owns the land and other critical infrastructure and dictates through policies, its operations. By the year 2006, 25 port terminals across Nigeria were conceded to private investors and operators to improve their capacity and output. Despite the involvement of the private sector in port operations and management, the government has retained a strong role in port development. Generally, in a market-oriented economy, the government continues to be responsible for subsidization and the development of public goods (goods that have social utility) since that cannot be provided by the private sector because of low or zero profitability. Moreover, another critical reason for the continuing government involvement in the port sector is the imperative responsibilities of the government in the areas of land use planning, environmental protection, job creation, and the economic stimulation of underdeveloped areas (World Bank, 2007). A paradigm shift from a system of ownership and administration which resulted in improved port performance, safety and annual turnover in the Nigerian Maritime industry.

Many literature reports have highlighted the economic benefits of port reforms to the Nigerian business sector notably, Nwanosike (2014) and Oghojafor *et al.* (2012). While a handful of other articles, Olaogbebikan *et al.* (2014) and Godfrey *et al.* (2018), have evaluated general port performances across various indices within the pre and or post-concession era with a view of general sustainability. Based on the background information provided, the objective of this research seeks to:



Table 1: Comparing Cargo throughput data Since the Inception of Seaport operations in Nigeria.

	Time Period	Total (metric tons)	Percentage (%)
Cumulative throughput data for a seaport in Nigeria	Pre-democratic/concession era, 1956 – 1999	489,071,426	29.43
	Post-democratic/concession era, 2000 – till date*	1,172,880,603	70.57

Source: Adapted from Olaogbebikan et al and Nigerian Port Authority.

Appraise the impact, port reforms have had on the performance of Nigerian seaports within the democratic dispensation (2000 – till date) amidst some lingering challenges such as congestion, turnaround delays and infrastructure inadequacies bedevilling the maritime sector within the period. Assessment of the growth pattern after the privatization of the seaport complexes based on a 20-year evaluation time series and the development of a 10-year forecast pattern for cargo throughput of seaports in Nigeria between year, 2020 to 2029 using an arithmetic sequence have been undertaken.

2. Nigerian Seaports Post-Reform

The “Landlord port model” adopted in Nigeria, took a centre stage in the year 2006. As a result, six main seaports comprising 25 port terminals have been operational. They include, the Apapa and Tin Can ports in Lagos State, Port Harcourt and Onne port in Rivers State, and the Warri and Calabar Ports in Delta and Cross River State respectively. This has led to an increase in productivity and increase in cargo throughput as well. As a result, access to international shipping lines has improved. This positive experience has led the Nigerian Government to consider further port developments (UNCTAD, 2011). The timeline taken for the various initiatives developed by the government in the transformation of these seaports is highlighted below.

Table 2: Timeline showing port reform in Nigeria

Year	Development Recorded
2000	Creation of the National Council on Privatisation (NCP) and the Bureau of Public Enterprises (BPE) by Privatisation and Commercialisation Act No.28/1999.
2001	Formation of the Transport Sector Reform Committee (TSRC) an arm of the NCP.
2002	Commissioning of Ports Modernisation study project by the BPE with funds from the World Bank
2003	Contracting of third-party transaction advisors by the BPE to perform due diligence, prepare bidding documents and advise on negotiations.
2004	Initiation of the first four bidding and negotiation rounds.
2005	The effective date of the first concession.
2006	Transfer of terminals from the NPA to concessionaires

Source: Adapted from Pallis, (2012).

The bureau of public enterprise (BPE) spearheaded the reform exercise placing concessionaires to be in charge of the day-to-day running of the ports, especially cargo handling, while the management of the Nigerian Port Authority (NPA), remained as the



“landlord”. Table 3 shows the details of the port terminals (post-concession) and their handover dates.

Table 3: Details of Port terminals (post-concession)

Terminal	CompanyName	LTY	HandoverDate
ApapaTerminalA	ApapaBulkTerminalLtd.	25	3rdApril 2006
ApapaTerminalB	ApapaBulkTerminalLtd.	25	3rdApril 2006
ApapaTerminalC	ENLConsortium	10	3rdApril 2006
ApapaTerminalD	ENLConsortium	10	3rdApril 2006
ApapaTerminalE	GreenviewDev.Nig.Ltd.	25	3rdApril 2006
ApapaContainer Terminal	APMTerminalsLtd.	25	3rdApril 2006
Ijora Container Depot	LilypondContainer DepotNig.Ltd.	10	3rdApril 2006
TCIPTerminalA	JosepdamPortsServicesLtd.	10	10thMay2006
TCIPTerminalB	Tin CanIsland Container Ltd.	15	10thMay2006
TCIPTerminalC	Ports & Cargo Handling Serv.Ltd	10	10thMay2006
TCIP RoroTerminal	Five Star LogisticsLtd.	15	10thMay2006
PortHarcourtTerminalA	Ports&Terminal OperatorsNig.Ltd.	15	23rdJune2006
PortHarcourtTerminalB	BUAPorts&TerminalsLtd.	25	23rdJune2006
OnneFOTA	IntelsNigeriaLtd.	25	21stJune2006
Onne FLTA	Brawal Oil ServicesLtd.	25	21stJune2006
Onne FLTB	IntelsNigeriaLtd.	25	21stJune2006
Jetty FOT Onne	Atlas CementCo.Ltd.	25	21stJune2006
Calabar NewPortTerminalA	IntelsNigeriaLtd.	25	23rdJune2006
Calabar NewPortTerminalB	Ecomarine Nig.Ltd.	10	1stAugust 2007
Calabar TerminalC (oldport)	Addax LogisticsNig.Ltd	25	26thMay2007
WarriOldPort	TerminalA IntelsNigeriaLtd.	25	23rdJune2006
WarriOldPortTerminalB	Associated Maritime ServicesLtd.	10	12th June2007
WarriNewPortTerminalB	IntelsNigeriaLtd.	25	23rdJune2006
WarriNewPortTerminalC	JuliusBerger PLC	25	4th May2007
KokoTerminal	GreenleighLimited	10	12th June 2007

Note: *LTY is LeaseTermsin Years*

Source: *Nigerian Port Authority Brand Manual (2005).*

The major policy changes highlighted, contributed to making the ports more user-friendly with the concessionaires embarking on several measures to attract clients to their terminals. Since adopting the port reform, NPA has continued to discharge its multiple responsibilities of the landlord and technical regulator apart from its official maritime administrative functions. Realising the benefits of the progress that had occurred in the maritime sector and the economy, the Federal Government has however continued to take necessary measures to ensure that the benefits gained are in progress at all times (African Development Bank Report, 2010 and Oghojafor, *et al.*, 2012). Given ensuring policy adjustments, planning and forecasting for the future, it is imperative to analyse performance over post-reforms to give an insight into the level of gains recorded by the wholesome terminal concession (Nwokedi, 2019).



3. Methodology

To effectively assess the performance of the seaport complexes under study, a quantitative research methodology was adopted. The desk study approach was undertaken as a yardstick to verify whether the port reform programs adopted in Nigeria had resulted in the expected outcomes highlighted in previous literature by Olaogbebikan *et al.* (2014) and Nwokedi *et al.*, (2019) for all examined ports in view. The desk research included a review and analysis of the existing data from various secondary sources, such as the reports and studies undertaken by academic researchers including Nwokedi *et al.* (2019) and Nwanosike, (2014), with the sole objective of evaluating changes in the Nigerian port industry concerning port operational structure as well as technical efficiency of cargo handling. A secondary source of data was obtained from the Nigerian Port Authority (NPA) for analyses as well as independently sourced data from relevant research and internet publications. These included cargo throughput data for the Ports, notably, Lagos Port Complex (Apapa and Tin Can), Port Harcourt Port Complex, Onne Port Complex, Warri Port Complex and Calabar Port Complex from year 2000, indicating the democratic period of pre-reform era to year 2005, through to the transition (concession) period in the year 2006 and the current post-reform era (2019); cumulatively, a time series of 20 years based on the availability and reliability of the currently sourced data. Collated data relating to port cargo throughput, gross registered tonnage and a total number of vessels from the Nigerian Port Authority (NPA) and National Bureau of Statistics, through a 20-year time series (2000-2019) was been evaluated using charts and arithmetic analytical method. For forecasting, the average PCT within the period of the millennial and pre-concession era was determined and used to establish a minimum threshold for the performance of the ports (post-concession) under study. In essence, obtaining the average cargo throughput figures from year 2000 to 2006 (within the concession phase) was crucial to establishing a minimum threshold performance and determining forecast trends for years to come.

The regression line method and moving average method are both suitable methods for time series analysis (Olaogbebikan *et al.*, 2014). For data analysis, a simple moving average which is based on the concept of arithmetic mean was used to determine the base port cargo performance index, denoted by $X_{base} = \sum_{i=1}^n \frac{x_i}{n}$ where x_i and n , denote the individual port cargo throughputs (PCT) values and number of years (2000 to 2006) respectively. Using this method offered a direct and simplistic approach to obtain the average cargo throughput within the democratic pre-concession period. The arithmetic difference obtained from the previous year is given by the variation, $V = X_n - X_p$ for each year in view, where X_n and X_p represents PCT values for the present and immediate previous years respectively. This analysis assumes an arithmetic sequence at and beyond the base year for improved throughput performance levels (Nwokedi *et al.*, 2019). Therefore, the sequence adopted was of the form shown below in line with Nwokedi *et al.*, (2019).

$$T = a, a + d, a + 2d, \dots, a + (n - 1)d \dots\dots\dots 1$$



Where T = cargo throughput series, a = first or base term of the sequence and d = the common difference of the sequence.

The sum of the arithmetic series given by the formula in equation (2) below was used to compute the common difference, d which was observed to be unidentical from the cargo throughput data across the various years.

$$\sum T_n = \frac{n}{2} [2a + (n - 1)d] \dots\dots\dots 2$$

The above formula was used to compute d , for forecasting. Analysis of variance was used to determine whether or not there was significant variance for the three (3) variables analysed.

4. Results

Table 4: Annual Gross Registered Tonnage, Port Cargo Throughput and Vessels Recorded for Seaports in Nigeria between the Year 2000 and 2019

Year	Gross Registered Tonnage (GRT) (metric tonnes)	Annual percentage change in GRT	Port Cargo Throughput (PCT) (metric tonnes)	Annual percentage change in (PCT)	Number of vessels (No.V)	Annual percentage change in No. of vessels
2000	44,432,370		28,932,880		4087	
2001	56,106,345	26.27	35,940,692	24.22	4473	9.44
2002	53,267,921	-5.06	36,987,241	2.91	4143	-7.37
2003	60,622,666	13.81	39,765,945	7.51	4315	4.15
2004	61,384,221	1.26	40,816,947	2.64	4553	5.51
2005	60,541,810	-1.37	44,952,078	10.13	4586	0.72
2006	63,267,047	4.50	46,150,518	2.67	4800	4.67
2007	84,806,792	34.05	57,473,350	24.53	4849	1.02
2008	89,505,702	5.54	64,372,749	12.00	4623	-4.66
2009	90,603,611	1.23	65,775,509	2.18	4721	2.12
2010	108,621,872	19.89	76,774,727	16.72	4881	3.39
2011	122,614,716	12.88	83,461,697	8.71	5232	7.19
2012	120,818,683	-1.46	77,104,738	-7.62	4837	-7.55
2013	130,628,057	8.12	78,281,634	1.53	5369	10.10
2014	148,323,065	13.55	84,951,927	8.52	5333	-6.33
2015	141,250,703	-4.77	77,387,638	-8.90	5014	-5.98
2016	134,066,547	-5.09	70,365,036	-9.07	4373	-12.78
2017	130,357,357	-2.77	71,535,636	1.66	4292	-1.85
2018	128,671,805	-1.29	73,175,127	2.29	4009	-6.59
2019	32,974,368	-74.34	18,674,534	-74.48	1045	-73.93

Source: Authors Compilation



Table 5: Computation of Variance for GRT, PCT and No.V for Seaports in Nigeria between the Year 2000 and 2019 (Anova: Single Factor)

Groups	Count	Sum	Average	Variance
GRT (2000 - 2019)	20	1.86	93143283	1.37
PCT (2000 -2019)	20	1.17	58644030	4.1
No.V (2000 -2019)	20	89535	4476.75	808075.6

Source of Variation	SS	Df	MS	F	P-value	F crit
Between Groups	8.87	2	4.43	74.73361	1.17	3.158843
Within Groups	3.38	57	5.93			
Total	1.23	59				

Source: Authors Computation

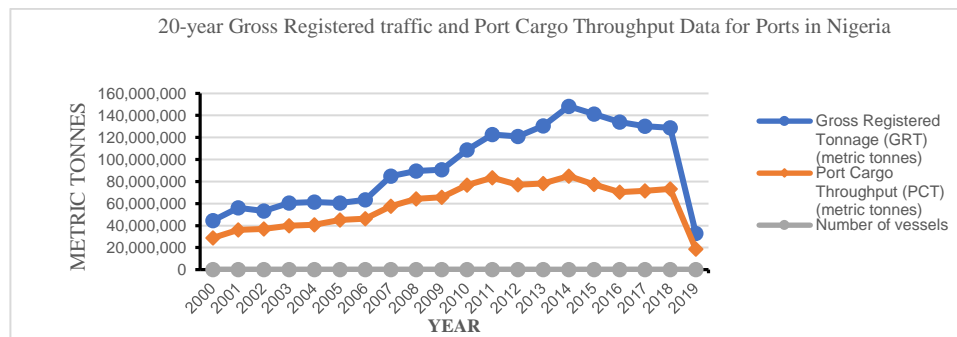


Figure 1: Gross Registered Tonnage and Port Cargo Throughput between 2000 and 2019

From Table 4, 5 and Figure 1 above, annual data on three (3) variables, Gross Registered Tonnage (GRT), Port Cargo Throughput (PCT) and Total number of Vessels (No.V) were been analysed over 20 years (2000-2019). The time series selected for the observation was apt, deliberate and historic as it highlighted glimpses of trade progress at a nascent stage, recorded in the era of the democratic dispensation. As shown in Table 4, the post-democratic era preceding the concession period (2000-2005), showed a marginal but steady increase, peaking at 44,952,078 metric tonnes for port cargo throughput figures. The post-concession period (2006 till date) immediately marked an impressive growth (24.53%) in port cargo throughput (PCT) performance between (2006-2007) followed by a period of sustained growth between (2008-2011). Years 2012, 2015 and 2016 marked periods of negative growths -7.62%, -8.90% and -9.07% respectively, although they were observed not to fall below the PCT threshold of the pre-concession era. A visible dip in the growth of PCT for the year, 2019 (-74.48%) was attributed to the COVID-19 pandemic that resulted in a global lockdown which adversely truncated economic activities, hence variable data obtained within this period only included the time frame before the lockdown. Table 5



highlights the level of significance in variance between GRT, PCT and No.V at the 95% confidence interval for fisher’s distribution. Since the F value (74.73361) was observed to be greater than the F critical (3.158843), it can be inferred that a significant difference exists between the variance of the three variables. This further explains that port reforms through concession agreements have had an influence on performance within the period under observation.

Figure 1 depicts that, for most of the 20 years, an upward but unsteady trend was observed with occasional dips indicating underlying challenges with growth sustainability. These issues could be attributed to lack of significant improvement among other unmeasured variables such as berth occupancy time, turnaround time, port capacity and speed of service delivery (Olaogbebikan *et al.*, 2014).

Table 6: Throughput Data for Seaports in Nigeria between the period 2000 and 2019

Year	Port Cargo Throughput (PCT) (metric tons)	Variation $V = X_n - X_p$ (metric tons)
2000	28,932,880	-
2001	35,940,692	7,007,812
2002	36,987,241	1,046,549
2003	39,765,945	2,778,704
2004	40,816,947	1,051,002
2005	44,952,078	4,135,131
2006	46,150,518	1,198,440
2007	57,473,350	11,322,832
2008	64,372,749	6,899,399
2009	65,775,509	1,402,760
2010	76,774,727	10,999,218
2011	83,461,697	6,686,970
2012	77,104,738	-6,356,959
2013	78,281,634	1,176,896
2014	84,951,927	6,670,293
2015	77,387,638	-7,564,289
2016	70,365,036	-7,022,602
2017	71,535,636	1,170,600
2018	73,175,127	1,639,491
2019	18,674,534	-54,500,593
$\Sigma T_{2000-2019} = 1,172,880,603$		

Source: Authors Computation

A common sentiment shared by previous studies (Nwanosike, 2014) is the fact that the change to civilian rule ushered in economic progress and reposed confidence from the international community thus improving trade relations. However, from the time series data aggregation highlighted above, it was deduced that all three variables performed averagely or marginally in terms of sustained positive growth as seen in the relatively inconsistent nature of their increase over the years. For the performance assessment, port cargo



throughput (inbound and outbound) was deemed a critical variable for growth index performance since revenue earnings depended on it.

As shown in Tables 6 and 7, the sum of port cargo throughput (PCT) was computed to be 1,172,880,603 metric tons within the 20 years evaluated (2000 - 2019). To establish a minimum growth threshold for futuristic planning purposes, the average PCT from the millennial pre-concession era was aggregated and manipulated as an independent variable with the established common difference for each year. The result from the forecast analysis is highlighted in Table 8. The forecast prediction pattern based on the arithmetic sequence was streamlined in a manner to skew growth patterns for PCT above the established benchmark of the pre-concession period. In essence, a good performance indicator over 10 years, is predicated on the fact that administrators and concessionaires must workhands on deck to ensure PCT values fall within acceptable values of the threshold. Therefore, $X_{base} + (n - 1)d \geq 39,078,043$ metric tons for PCT figures.

Table 7: Determination of Minimum Cargo Throughput Threshold and Common Difference for Forecast Computation

Cumulative PCT (20-year period) = $\sum T_n$	Base performance benchmark (2000-2006) $X_{base} \equiv \sum_{i=1}^n \frac{x_i}{n}$	Difference, d
1,172,880,603	39,078,043	2,059,578

Source: Authors Computation

Table 8: 10-year Forecast Pattern for Cargo Throughput Tonnage of Seaports in Nigeria

Forecast Year in View	Successive Term	Port Cargo Throughput Benchmark Sequence $X_{base} + (n - 1)d$	Forecast Estimates for Port Cargo Throughput (metric tonnes)
2020	21 st Term	$X_{base} + 20d$	80,269,603
2021	22 nd Term	$X_{base} + 21d$	82,239,181
2022	23 rd Term	$X_{base} + 22d$	84,388,759
2023	24 th Term	$X_{base} + 23d$	86,448,337
2024	25 th Term	$X_{base} + 24d$	88,507,915
2025	26 th Term	$X_{base} + 25d$	90,567,493
2026	27 th Term	$X_{base} + 26d$	92,627,071
2027	28 th Term	$X_{base} + 27d$	94,686,649
2028	29 th Term	$X_{base} + 28d$	96,746,227
2029	30 th Term	$X_{base} + 29d$	98,805,805

Source: Authors Computation

5. Conclusion and Recommendations

Based on this study, three important indicators (port cargo throughput, gross registered tonnage and total number of vessels) were highlighted to assess the seaport performance in the post-democratic and post-concession era in Nigeria. The port cargo throughput (PCT) was the critical variable used to depict seaport performance over the years. From the



analysis, it was deduced that the seaport in Nigeria performed marginally in terms of productivity under the democratic dispensation, before the concession period (2000–2005). Their performances showed further initial relative improvement as highlighted by the 24.53% growth immediately recorded between (2006–2007), after the concession period. However, the gains recorded as a result of the government policy changes have been inconsistent thus depicting dwindling figures, with the highest PCT figures (84,951,927 metric tons) recorded in the year 2014. The reasons, as buttressed by olaogbebikan *et al.* (2014) that were further attributed to the dwindling performances over the years despite policy reforms in the maritime sector include, the lingering operation inefficiencies (congestion, low port capacity), infrastructural deficit and corruption which has long been endemic in both the pre-concession and post-concession era. Administrative policy changes such as import ban on certain consumer goods as part of the government's effort to curb the country's internal trade deficit and encourage local production have also had their impact. External border factors (insecurity) as well as the fall in currency valuation in recent times have remained one of the key reasons for declined port usage in Nigeria.

Developing a forecast pattern is a necessary tool required for performance investigation and planning with a view to set targets for individual significant variables to achieve sustained growth.

To ensure improved and sustained performance of the Nigerian seaports, concessionaires must improve port capacity across the various port terminal while the government undertakes drastic measures of improving highway infrastructure, especially around the port terminal to alleviate the problems associated with congestion. Robust engagements by the government in the aspect of public-private partnership should be embarked upon to facilitate the construction of new port terminals (Ondo and Baro ports) which would consequently divert cargo traffic from the major ports (Apapa and Tin Can) to generally improve efficiency. The complete dredging of the Niger River is a massive step toward direct maritime investment that should be undertaken by the government at the federal level to enable deep sea vessels to ply their trade across the Nigerian seaports located on the river tributaries thus, increasing revenue and output generation.

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A Preliminary Analysis of the Effectiveness of Data in Empirical Research

Bashir Danlami Sarkindaji
(bashirdaji77@gmail.com)

Department of Business Administration, IBB University Lapai, Niger State Nigeria

Abstract

This study X-rays a preliminary investigation of the effectiveness of research data aimed at reducing or eliminating error possibilities bedeviling researchers. The methodology employs survey design through questionnaire administration to elicit responses from a sample of 314 respondents that could inform decisions from the population. Findings revealed that preliminary data screening is purposely to present precise and dependable data. As far as possible, avoid statistical errors, and find a way to deal with everyday research challenges like population, sampling, response rate, data screening and cleansing i.e. missing values, outliers, non-response bias, common method variance, descriptive statistics, data altering, factor analysis, multicollinearity, correlation test, data mining, or developing graphical representation. It is recommended that researchers should as a matter of necessity place pre-test research investigation a priori and center to every research.

Keywords: Preliminary Analysis, Effectiveness, Data, Research, Error Possibilities

1. Introduction

The motive behind preliminary data testing in empirical studies is to present accurate and reliable data. As far as possible, avoid statistical errors, and find a way to deal with everyday research challenges like outliers, missing data, data altering, data mining, or developing graphical representation (Idris & Galoji, 2022). To design, administer and collect dependable data capable of providing a researcher with relevant and reliable findings requires a pre-test investigation of the methodology adopted as well as the research instrument to be used (Samson & Sarkindaji, 2022). Although several studies have argued strongly about the need for preliminary data testing before real data analysis, not many researchers had been observing keenly its due diligence. This manifested in many obstacles in the data analysis processes thereby hindering the effectiveness and reliability of the final output (Hair *et al.* 2019).

Of the varying phases involved in empirical research data collection and analysis though considered one of the most critical components of the research process lack ample attention. Studies have over the years affirmed the relationship between instruments, sources and data analysis techniques employed to have a significant influence on study findings (Solomon & Ringim, 2022). The choice of a statistical technique of data analysis is determined by the research objective, question or hypothesis to be tested (Hair *et al.* 2010).



Analysis of data is as important as any other component of the research process (Pallant, 2011, Sekaran & Bougie, 2010). Hence, to provide accurate, reliable and interpretable results, the method and source of data gathered in the research process must be organized and examined carefully via appropriate planning. Much of the success of the data analysis test lie in the ability of the choice of appropriate method for analysis and observance of a preliminary test (Idrsi & Galoji, 2022; Raykov & Marcoulides, 2006).

Although studies have emphasised extensively the association between data source, reliability and results accuracy, a good number of empirical studies conducted are non-compliant with the norms of data analysis (Hair *et al.* 2019; Sarkindaji, 2011; Newman, 2007; Tabachnick & Fidell, 2007; Yamane, 1967). Further, it is imperative to note that before going into data analysis proper a researcher must place priority on preliminary data investigation to attest to the authenticity and workability of data. Preliminary data investigation, however, emphasised that any data analysis model to be employed must first be justified on pre-test grounds and be consistent with already established theories or results from prior studies in the practical domain under study (Raykov & Marcoulides, 2006). Blind use of data analysis technique could result in a roadmap that leads researchers to deviate from their original substantive goals. However, one would not just expect to enter data into any statistical software and run the analysis to expect magical results, necessary conditions of preliminary investigations must be observed, hence the need for this research. The paper aimed at X-raying the essential preliminary tests expected of every researcher after successful instrument design, data collection, and prior to commencement of data analysis proper. Specifically, the research focused on some grey areas such as population, sampling, response rate, data screening and cleaning such as missing values, detection of outliers, non-response bias, common method variance test, descriptive statistics, factor analysis, multicollinearity, and correlation test. For every empirical study, it is expected that a holistic pre-test investigation must be observed to guarantee accuracy and dependability of output.

2. Literature

Population, Sampling and Response Rate

To ensure generalization and accurate presentation of research findings, it is imperative to determine the population and sample size to be studied in the preliminary investigation stage. The choice of a substantive population is a prerequisite in the determination of an effective sample size. Studies have affirmed the use of empirically established models in determining population and sample and not mere guessing or predictions as used in many studies. For instance, models like Krejcie and Morgan (1970), Yamane (1967) and many others can be deployed. After establishing a determined population, an appropriate sample size, as well as sampling technique, should be used in administering a research instrument e.g. probability sampling that permits all the population elements equal chance of being chosen. A study by Hashim *et al.* (2015) on Institutional Image, utilized a population of 1541 postgraduate students in Malaysia, with an appropriate sample size of 318 students who participated in the survey. 304 questionnaires representing 95.6% response rate were



successfully used. The response rate is appropriate, and perhaps due to the researcher's ability to make follow-up calls, emails, personal visits and SMS texts as a reminder to respondents (Sekaran & Bougie, 2009). An acceptable response rate of 30% is sufficient for survey research (Hair *et al.*, 2010). However, the obtained response rate is consistent with the suggestion of scholars concerning computation of the required sample size for multiple regressions in social sciences (Stevens, 1996; Tabachnick & Fidell, 2007).

Data Screening and Cleaning

Missing Value

Once the administered questionnaires were successfully retrieved by a researcher, the procedure of inserting data into a specific statistical analysis technique commenced e.g. SPSS statistical package. In the preliminary stage, all questions were carefully coded in a fashion that enable the software to identify those that concerns demographic information of respondents, independent, mediating, moderating and dependent variables of the study. However, caution and patience were observed so as to achieve minimal possibility of missing values. Missing values sometimes arise due to respondent's inability to attempt some questions, respond twice to some or attempt some partly. Pallant (2011) stressed that since social science surveys involve mostly dealing with human beings, it is absolutely rare that you obtain complete data from every case, hence it has become necessary for a researcher to check his data file for missing values for each variable. As a precaution to minimize the occurrence of missing data in this study, the researcher and research assistant made sure that at every point of collection careful re-verification is undertaken to ensure questions are adequately answered completely. In cases of serious missing information, we plead with respondents to kindly respond. Even though the task is tough, still it reduces the possibility of missing values or not attempted questions that in the end reduce the quality of study findings. Consequently, as soon as the data had been entered, a preliminary descriptive statistics were observed to find out if there is any missing value. It was observed that missing values exist in the data i.e. about 13.7% but were automatically replaced due to their respective percentage. Studies have suggested when cases of missing values are greater than 15% they should be deleted provided that the returned questionnaires or samples are sufficient for the sample required in the survey (Hair *et al.*, 2010; Tabacnick & Fidell, 2007).

Detecting of Outliers

The next stage of data screening after the detection and replacement of all missing values in a preliminary investigation study is detection of outliers between the responses of respondents. Outliers are cases whose values are well above or below the mainstream of other cases (Pallant, 2011). Detecting outliers assist researchers in identifying cases with extreme scores and whose values may perhaps have considerable influence on the result, when it is well below, well above or present an exceptional combination of values that overlap a number of the study variables. Since the study involves examining the relationships amongst multiple variables through multiple regression analysis, Mahalanobis



Distance (D^2) using the SPSS package was employed to detect the presence of cases with extreme score values. Based on Chi-square table of p-value = 0.001 and a total of 53 questionnaire items any value above 89.27 (Tabachnick & Fidell, 2007) was believed to be an outlier and deleted from subsequent analysis. In all a total of 47 cases representing only 15% of the sampled cases were deleted, with that they cease to constitute a threat to the analysis. Since social science researches involve human behaviours, the possibility of errors of omission or commission attributable to both researcher and respondents becomes inevitable (Pallant, 2011). Therefore, researchers should be careful when treating outliers for you may remove awkward cases to make your results look impressive and also you may lose an opportunity to learn something unexpected (Hair *et al.*, 2019; Pallant, 2011; Dugard *et al.*, 2010). Hence, an acceptable outlier of not more than 15% is considered adequate in empirical research and do not seem to distort the results.

Table 1: Results of Independent Sample T-test for Non-Response Bias Test

Construct	GROUP	N	Mean	Std. Deviation	Levene's Test for Equality of Variances	
					F	Sig.
COR	Early Response	200	2.515	0.767	0.599	0.440
	Late Response	67	2.765	0.694		
CRMO	Early Response	200	1.592	0.564	3.314	0.070
	Late Response	67	1.442	0.509		
KMGT	Early Response	200	1.702	0.588	0.085	0.771
	Late Response	67	1.699	0.638		
TCRM	Early Response	200	2.537	0.679	1.705	0.193
	Late Response	67	2.529	0.730		
CRMM	Early Response	200	1.756	0.474	0.251	0.617
	Late Response	67	1.606	0.460		
CLOY	Early Response	200	4.840	0.823	0.460	0.498
	Late Response	67	4.537	0.745		

Source: Authors Computation

Non-Response Bias

Non-response bias is defined as the changes in the responses among respondents and non-respondents (Lambert & Harrington, 1990). In approximating the likelihood of non-response bias, Armstrong and Overton (1977) recommended a time-trend prediction technique that requires an evaluation of the early and late respondents (i.e., non-respondents). They contended that late respondents exhibit the same features as non-respondents. Therefore, to further reduce non-response bias issues, achieving at least a response rate of 50% was suggested (Lindner & Wingenbach, 2002). In line with Armstrong and Overton's (1977) approach, respondents of this study were categorized into two major groups: group one represented those that responded within 30 days i.e., early respondents, while group two are those that responded after 30 days i.e., late respondents (Vink & Boomsma, 2008). Hence, 200 (74.9%) respondents which constituted a greater part of the sample responded to the questionnaire administered within 30 days, while the



remaining 67, constituting (25.1%) responded after 30 days (see Table 1). Specifically, in order to identify the possibility of any non-response bias in this survey. The table below shows an independent sample t-test observed on each construct comprising COR, CRMO, KMGMT, TCRM, CRMM, and CLOY.

The results of the table above indicated that for all the eight constructs used in this study the equal variance significance values were above 0.05 significance level of Levene's test for equality of variances as recommended by (Field, 2009; Pallant, 2011). Therefore, the assumption of equality of the variances between early and late respondents has not been violated. Thus, it has been established that non-response bias does not pose a threat to this study. In addition, based on the suggestion of Lindner and Wingenbach (2002), since this study had achieved 54.9% response rate, it has further emphasized that the non-response bias issue doesn't pose a threat.

Common Method Variance Test

Common method variance (CMV), also known to as mono method bias, refers to “variance that is attributable to the measurement method rather than to the construct of interest” (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003, p. 879). Researchers have generally agreed that common method variance is a major concern for scholars using self-report surveys (Lindell & Whitney, 2001; Podsakoff *et al.*, 2003; Spector, 2006). For example, Conway and Lance (2010) stated that “common method bias inflates relationships between variables measured by self-reports” (p. 325). Similarly, in a meta-analytic review of 55 studies on attitudinal and dispositional predictors of OCB, Organ and Ryan (1995) stated that studies conducted using self-report surveys are associated with spuriously high correlations due to common method variance. This study, however, in an attempt to reduce the effects of CMV adopted numerous procedural solutions (Podsakoff, MacKenzie, & Podsakoff, 2012; MacKenzie & Podsakoff, 2012; Viswanathan & Kayande, 2012; Podsakoff *et al.*, 2003; Podsakoff & Organ, 1986).

In step one, to minimize evaluation anxiety the respondents were made to understand that their responses would be treated with utmost confidentiality and that no wrong or right answer if chosen from the items in the questionnaire. Step two, attempted to reduce common method biases by enhancing the scale items used. This was realised by avoiding the choice of ambiguous terms in the study questionnaire and where such terms become inevitable, simple examples were given. Also to further enhance scale items, questions asked were written in easy, precise and brief language. In addition to the procedural solutions explained above, this study further adopted Harman's single factor test (SFT) suggested by Podsakoff and Organ (1986) to test CMV. Usually, this procedure subjects all the study's variables of interest to exploratory factor analysis and the outcomes of the unrotated factor solution are then assessed to determine the number of factors that are essential to account for the variance in the variables (Podsakoff & Organ, 1986). The major concern of Harman's (1967) SFT assumption is that for a considerable amount of CMV to exist, either a single factor may emerge, or one general factor would account for most of



the covariance in the independent and dependent variables (Podsakoff & Organ, 1986). Following Podsakoff and Organ (1986), all items in this study were subjected to a principal components factor analysis. The outcomes of the analysis revealed eight factors, explaining a cumulative 49.97% of the variance; with the first (largest) factor explaining 18.05% of the total variance, which is less than 50% (Kumar, 2012). Furthermore, the results indicate that no single factor accounted for the majority of covariance in the independent and dependent variables (Podsakoff *et al.*, 2012). Hence, this suggests that common method bias is not a major concern and is unlikely to inflate relationships between variables measured in this study.

Descriptive Statistics

The table below presents the results of the analysis of means and standard deviations of the survey variables. Variables comprising of independent and moderation were measured on a seven-point Likert scale. The mean score criterion used to determine the extent of agreement between the survey variables ranges from 2.99 or less to be “low”, mean score of 3.00 to 4.99 to be “moderate” while mean score 5.00 above to be “high”.

Table 2: Mean Score and Standard Deviation of Study Variables

Variables	Mean (M)	Standard Deviations (SD)
Customer Orientation (COR)	2.515	0.8361
CRM Organization (CRMO)	1.554	0.5535
Knowledge Management (KMGT)	1.721	0.6227
Technology-based CRM (TCRM)	2.500	0.7873
CRM Maintenance (CRMM)	1.693	0.5061

Source: Authors Computation

The above table depicts the means and standard deviations of the five CRM dimensions i.e. COR, CRMO, KMGT, TCRM and CRMM used in this survey. Considering the responses of respondents, COR had a mean score of (M = 2.515, SD = 0.8361), CRMO (M = 1.554, SD = 0.5535), KMGT (M = 1.721, SD = 0.6227), TCRM (M = 2.500, SD = 0.7873) and CRMM (M = 1.693, SD = 0.5061). Of all the study variables respondents perceived their implementation by telecommunication operators in Nigeria to be low i.e. none of the mean scores exceeded 2.99 cut-off point. Although CRMO dimension was perceived as having the lowest level of implementation (M = 1.554, SD = 0.5535) followed by CRMM (M = 1.693, SD = 0.5061) in that order. Similarly, the moderating effect of switching costs on the relationship between CRM dimensions and customer loyalty to mobile telecommunication services was also perceived to be low by respondents. Overall, results pointed to the fact that CRM application in Nigeria’s mobile telecommunication sector is extremely low, and that is a major factor resulting in the extreme subscribers’ dissatisfaction with mobile services.

Factor Analysis of Measurement Variables

To validate the appropriateness of the study’s sample size and strength of the relationship between the items, exploratory factor analysis was carried out on each independent variable namely COR, CRMO, KMGT, TCRM and CRMM. Overall the variables comprise a total



of 53 items with COR measured by 10 items, CRMO by 10 items, KMGT by 8 items, TCRM by 8 items, and CRMM by 10 items. Principal component analysis based on varimax rotation was carried out to identify those items whose values were suitable for retention for further analysis and who have met the recommended benchmark of above 0.6 and 0.3 for loadings and communalities respectively. After the final principal component test on each variable 14 items were deleted due to the inability to satisfy the recommended threshold values, thus 3 items for COR, 3 items for KMGT, 5 items for TCRM and 3 items for CRMM. All items for CRMO were completely retained. The result of factor analysis of each variable is as follows:

From the table above overall result of factor analysis on CRM dimensions and moderating variable of this study shows that measure of sampling adequacy KMO is 0.837 which has exceeded the value of 0.6, this implies that the data matrix is suitable for factor analysis. Bartlett's test of sphericity of all items revealed a significant Chi-Square value of 6193.27 approx and $p\text{-value} < 0.000$ indicating of howwell the correlated matrix is fit for factor analysis to be carried out. Similarly, communality values for all items after deleting those with loadings below the acceptable minimum threshold was above the recommended 0.3. Consequently, the total variance explained, screen plot and rotated component matrix with varimax rotation analysis revealed the occurrence of six significant factors with their eigen values exceeding 1. These factors were also supported by the direction of the screen plot.

The result of the first factor revealed the factor loading test for COR dimension. The dimension was measured using 10 items and after the initial analysis 3 items (i.e. COR1, COR2, COR9) were deleted due to the inability to load above 0.6 and communalities below 0.3. These items measure respondents' level of agreement to extent of customer orientation application in the mobile telecommunication services sector. The output of 7 items shows factor loadings of above 0.6 with an eigenvalue exceeding 1 (i.e. 9.087), thus indicating that the items are correlated with each other in terms of what they measure. About 21.113% of total variance was explained by items.

The analysis of the second factor shows respondents' opinion on the extent of CRM organization amongst operators in mobile telecommunication services. Based on a 10 items measurement, all indicated values above 0.6 and 0.3 for loadings and communalities respectively, hence the existence of a strong correlation between the items. The percentage of total variation explained by the items is 13.444 with an eigenvalue of 5.781 which is greater than one.

The result of the third factor indicated that KMGT dimension has 8 items. Overall 7 items were retained whose factor loading values range between 0.7 to 0.9 and communalities greater than 0.3. One item (i.e. KMGT6) was deleted due to lower loading of less than 0.6. About 4.916% of total variation explained by the items with an eigenvalue greater than one i.e. 2.114. This factor evaluates respondents' opinion on how the implementation of effective knowledge management in the mobile service industry could help firms retain the loyalty of customers.



The fourth factor shows that TCRM has 8 items out of which only 5 items were successfully retained due to their ability to load above 0.6 with communalities values more than 0.3. All 3 items consisting of TCRM1, TCRM2 and TCRM7 were deleted based on loadings below the minimum threshold of 0.6 and communalities below 0.3. In the same vein, about 4.462% of total variation explained by the items as their eigenvalue exceeded 1 i.e. 1.919. The factor assesses respondents' understanding of the effectiveness of CRM technology application in Nigeria's mobile service industry and how it has achieved in gaining their subscriber's loyalty.

The fifth-factor analysis result was on CRM maintenance. Initially, this dimension has 10 items but was reduced to 7 items after deleting CRMM1, CRMM2, and CRMM6 whose loadings and communalities values are below the recommended 0.6 and 0.3 respectively. About 4.361% of total variation is explained by the items with their eigenvalue greater than 1 i.e. 1.875. The factor measures respondents' perception of the level to which mobile firms are committed to maintaining CRM-related activities in the organizations.

The result of the last factor indicates the analysis for switching cost as a moderating variable amongst CRM dimensions and customer loyalty. Overall a total of 7 items were used and all showed an acceptable value of above 0.6 and 0.3 for factor loadings and communalities respectively. About 3.741% contributed to the total variance explained by the items with an eigenvalue of 1.609. It evaluates respondents' belief as to whether the presence of switching cost could assist in strengthening the relationship between subscribers' satisfaction and their loyalty to mobile telecommunication services.

Multicollinearity Test: Multicollinearity represents the extent to which a variable can be explained by the other variables in the analysis (Hair *et al.*, 2007). As multicollinearity increases, the ability to establish and distinguish a particular variable's effect can be compromised (Sarkindaji, 2011). In detecting the presence of multicollinearity, both tolerance levels and variance inflation factor (VIF) values for each variable were computed. Thus, tolerance level and VIF values of below 0.1 and above 10 respectively indicate the existence of high correlations (Pallant, 2011).

As can be seen above, the result of the analysis shows that both tolerance and VIF values for all predictor variables have met the satisfactory conditions for non-multicollinearity. Tolerance values are all above 0.1 and VIF all below 10, this implies that there is absence of multicollinearity amongst the variables used in this study.

Table 3:Result of CRM Dimensions Variable Test of Multicollinearity

Variables	Tolerance Value	VIF Value
Customer orientation	0.922	1.084
CRM organization	0.358	2.796
Knowledge management	0.376	2.662
Technology-based CRM	0.924	1.083
CRM maintenance	0.488	2.051

Source: Authors Computation



To check for the existence of multicollinearity in this survey, the tolerance value (TV) and variance inflation factor (VIF) is used. Tolerance explains the variability of a specific predictor variable not explained by other predictor variables in the regression model. Tolerance value above 0.1 shows the likelihood of non-multicollinearity and below 0.1 indicates multicollinearity (Pallant, 2011; Sekaran & Bougie, 2010). The VIF values above 10 indicates the possibility of multicollinearity while below 10 shows non-multicollinearity amongst the variables (Pallant, 2011; Sekaran & Bougie, 2010). The residual scatter plot is used to check for linearity amongst the study variables and is presumed that the plots would be rectangularly spread and concentrated or scattered at the centre or nearby 0 point (Pallant, 2011; Flury & Reidwyl, 1998). As deviations from rectangular distribution and centralisation at the centre point occurs, then the assumption of linearity is violated (Pallant, 2011). Outliers can also be discovered from the scatter plot. They are extreme cases of standardized residual above 3.3 or below -3.3 (Tabachnick & Fidell, 2007) which are mostly found with larger samples. The assumption of normality indicates that the disparity between the actual and forecasted independent variable scores achieved normal distribution (Coakes & Ong, 2011). Normality test can be accessed through normal probability plot (NPP) or histogram residual plot (HRP). Based on NPP absence of main deviation from normality occurs where the points lie in a sensible straight diagonal line starting from the bottom left to the top right. HRP explains the nature of distribution of data in situations of continuous variable as well as its correspondence with normal distribution. For the distributions in the histogram to be normal, the bars are to be close to the normal curve, thus the non-violation of its assumption. To check homoscedasticity, as a test of independence of the error term Durbin-Watson was employed. Scholars have suggested a value range of 1.50 to 2.50 as general rule of thumb and when attained, the presumption is not violated. Consequently, all of the assumptions were cautiously observed and followed while using regression analysis in this survey.

Correlation Test

In order to ascertain the relationship between the study variables, a Pearson product-moment correlation test was carried out. Correlation describes the association between two or more continuous variables that are linearly related (Coakes & Ong, 2011). A moderately

Table 4: *Correlation between the Variables*

Variables	COR	CRMO	KMGT	TCRM	CRMM	CSAT	SWC	CLOY
COR	1.000							
CRMO	- 0.175	1.000						
KMGT	- 0.095	0.765**	1.000					
TCRM	0.186	0.106	0.128	1.000				
CRMM	- 0.123	0.672**	0.658**	0.179	1.000			
CLOY	- 0.186	0.338**	0.266**	- 0.011	0.339**	0.242**	0.286**	1.000

Note: **Correlation is significant at 0.01 level (2-tailed)

Source: Authors Computation



weak correlation value of between 0.2 and 0.7 is considered suitable to establish the relationship between variables that are theoretically related (Mayer, 1999). The correlation coefficient is measured using a range of possible values of negative 1 or positive 1 which dictates the direction of the relationship.

From the result of the test in the Table 4.4, 5 predictors i.e. CRMO with $r = 0.338$, $p < 0.01$; KMGT with $r = 0.266$, $p < 0.01$; CRMM, with $r = 0.339$, are positive and significantly related to customer loyalty in Nigeria's mobile telecommunication industry. TCRM variable is affirmed to be insignificantly associated with customer loyalty. Also from the result, CRMM with correlation value of 0.339 contributed most to customer loyalty followed by CRMO, and KMGT. Although COR variable has significant negative influence on customer loyalty with correlation values of $r = - 0.186$, this has been established by numerous studies that Nigerian mobile telecommunication firms are more of product-oriented focused rather than customer-oriented in their operations. In the same vein, some correlations as observed in the table ranges from 0.419 to 0.765 which implies that the association among the variables are not too weak or extremely strong (i.e. > 0.90) to signify a multicollinearity problem. However, a few have indicated extremely weak or zero correlation as their values range between 0.1s06 to $- 0.006$ respectively, thus indicating that the factors are not perfectly correlated.

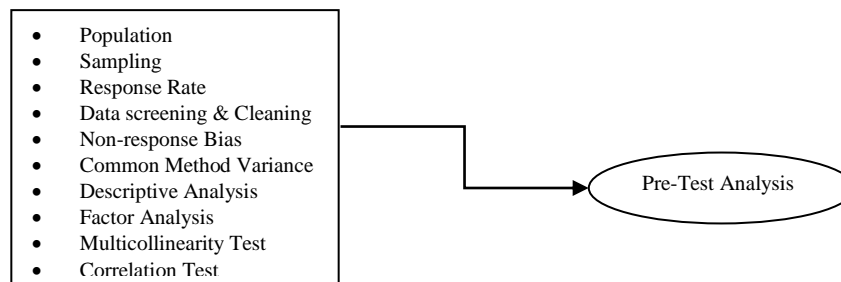


Figure 1: Conceptual Research Model of the Study

3. Methodology

The methodology of this study was a pure review of quantitative empirical studies from varying disciplines to affirm the arguments of scholars that a pre-test analysis is a necessity for effective data analysis. The study is purely survey research based that utilized five independent variables with measurement items selected from previous studies, comprising customer orientation (COR), CRM organization (CRMO), knowledge management (KMGT), technology-based CRM (TCRM), CRM maintenance (CRMM) specifically adapted from Sin & Yim *et al.* (2005). Also, customer loyalty (CLOY) was used as a dependent variable.



The choice of survey study was for three reasons. Survey method utilizes a structured as well as pre-designed questionnaire considered effective in extracting explicit and firsthand information from respondents (Malhotra *et al.*, 2008). The utilization of survey-based research expedites investigation of factors and associations not necessarily measurable directly (Hair *et al.*, 2003) such as customer loyalty as the study focus. Lastly, previous studies have widely employed survey-based research to ascertain consumer brand loyalty (e.g., Brodie *et al.*, 2009; Chaudhuri & Holbrook, 2001; Sirdeshmukh *et al.*, 2002), placing the method suitable for this study.

The quantitative method used to pre-test the analysis of these variables was SPSS software where a survey questionnaire was developed on every construct to measure customers' loyalty to telecommunication services. A population of 1120 telecom managers in Nigeria were chosen given an appropriate sample size of 572 managers who were administered survey questionnaire. In this case, 314 questionnaires representing 54.9% response rate were successfully used for preliminary analysis. After the deletion of outliers, only 267 questionnaires were retained in the final analysis.

4. Results

Testing Hypothesis

To test the proposed hypotheses of this study regression analysis is used. Although two types of regression analysis exist i.e. simple and multiple. Simple regression is used to examine the relationship between one predictor variable and one criterion variable (Dugard, Todman & Staines, 2010). In this study a number of independent variables are used to predict the dependent variable, hence the choice of multiple regression techniques. Multiple regression is a statistical technique employed to examine the association amongst one criterion or dependent variable and more than one independent predictor or variable (Coakes & Ong, 2011; Pallant, 2011). It is aimed to evaluate correlation and provides a more complex examination of the interrelationship between a set of variables. However, one would not just expect to enter data into the SPSS software and run the analysis to expect magical results, necessary conditions must be observed.

Coakes and Ong (2011) identified six underpinning assumptions in the use of regression technique. They involve the test of outliers, multicollinearity/singularity, normality, linearity, homoscedasticity and independence of residuals i.e. evaluated through residual scatter plots and normal probability plot of the regression standardised residual. Similarly, studies have argued for the need for appropriate sample size for multiple regression analysis. For example, approximately 15 respondents per IV (Stevens, 1996), based on formula $N > 50 + 8m$ where $m =$ number of IVs (Tabachnick & Fidell, 2007). With a sample size of 314 and both independent and dependent variables measured on a continuous scale, this study is considered appropriate for regression analysis. Consequently, all of the assumptions were cautiously observed and followed while using regression analysis in this survey.



Customer Relationship Management Dimensions (CRM) and Customer Loyalty

Since this study is aimed at examining the influence of customer relationship management (CRM) dimensions i.e. COR, CRMO, KMGT, TCRM and CRMM on subscribers' loyalty to mobile telecommunication services in Nigeria. Multiple regression analysis was used to evaluate the intensity of each predictor variable's contribution to criterion variable i.e. customer loyalty. Customer loyalty was regressed on respective CRM dimensions to ascertain individual predictor contribution and the output of the final analysis is summarised in the table as follows:

Table 5: Result of Regression Analysis on Customer Relationship Management (CRM) and Customer Loyalty of Unfiltered Data

Predictors (With CRMM)	Model 1 Std. Beta	t-value	Sig.	Decision
CRM Dimensions:				
Customer orientation	-0.032	-0.519	0.302	Not Supported
CRM organization	0.204	2.048	0.021**	Supported
Knowledge management	-0.330	-3.395	0.000***	Not Supported
Technology-based CRM	-0.052	-0.847	0.199	Not Supported
CRM maintenance	0.084	-0.982	0.163	Not Supported
R ²			0.076	
Adjusted R ²			0.058	
R ² Change			0.076	
F-Change			4.270	
Durbin-Watson			1.573	

Note: *** $P < 0.01$, ** $P < 0.05$, * $P < 0.1$

Source: Authors Computation

The result above presents the outcome of regression amongst CRM dimensions and customer loyalty before preliminary data filtering. About 7.6% or R^2 of 0.076 of the variation in customer loyalty is predicted by CRM dimensions used in the study (Adj. $R^2 = 0.058$, F-Change= 4.270). Only CRMO was found to positively predicted customer loyalty with beta value of ($\beta = 0.204$, $p < 0.05$), while KMGT established significant negative relationship at beta value of ($\beta = -0.330$, $p < 0.01$). Other dimensions such as COR, TCRM and CRMM were found to be insignificantly related to customer loyalty. Thus, hypothesis H8 is supported while H2, H5, H11, and H14 are not supported.

From the table above, the overall result after the preliminary data filtering revealed that 15.6% i.e. R^2 value of 0.156 of the variation in customer loyalty of telecommunication services was explained by CRM dimensions used in the study model (Adj. $R^2 = 0.140$, F-Change= 0.156, $p < .05$). Of these dimensions only two i.e. CRMO and CRMM have significantly contributed positively to predicting customer loyalty and with beta values of ($\beta = 0.205$, $p < 0.05$) and ($\beta = 0.224$, $p < 0.01$) respectively. The remaining dimensions i.e. COR, KMGT and TCRM were found not to be significant predictors of customer loyalty.



Table 6: Result of Regression Analysis on Customer Relationship Management (CRM) and Customer Loyalty of Filtered Data

Predictors (With CRMM)	Model 1 Std. Beta	t-value	Sig.	Decision
CRM Dimensions:				
Customer orientation	-0.118	-1.997	0.023**	Not Supported
CRM organization	0.205	2.153	0.016**	Supported
Knowledge management	-0.044	-0.470	0.319	Not Supported
Technology-based CRM	-0.045	-0.760	0.225	Not Supported
CRM maintenance	0.224	2.749	0.003***	Supported
R ²			0.156	
Adjusted R ²			0.140	
R ² Change			0.156	
F-Change			9.648	
Durbin-Watson			1.601	

Note: *** $P < 0.01$, ** $P < 0.05$, * $P < 0.1$

Source: Authors Computation

Therefore, hypotheses H4 and H13 are supported while hypotheses H1, H7 and H10 are not supported. Although COR was found to establish significant negative relationship at beta value of ($\beta = -0.118$, $p < 0.05$). Hence, the analysis shows strongly the importance of preliminary data filtering and the extent to which a researcher could obtain accurate, reliable and consistent output in the final analysis. About 8% significant influence in customer loyalty was explained by CRM dimensions after preliminary data filtering thereby resulting in additional hypothesis supported.

5. Conclusion and Recommendations

This research specifically centred on the need for pre-test analysis to ascertain the authenticity, reliability as well as accuracy of data in empirical research. The research focused on some grey areas such as population, sampling, response rate, data screening and cleaning such as missing values, detection of outliers, non-response bias, common method variance test, descriptive statistics, factor analysis, multicollinearity, and correlation test. However, the study established that independent variables such as COR, CRMO, KMGT, TCRM, CRMM, and CLOY as dependent variables are all constructs whose items are empirically proven as a measure of their identified constructs. The preliminary investigation established that CRM dimensions as used by prior studies are constructs that significantly influence customers' loyalty to telecommunications services. The findings of the pre-test analysis corroborated with earlier studies by Abdullateef *et al.* (2010) who all found that CRM dimensions as used in this analysis were effective and reliable constructs in the measure of customer relationship management. The regression analysis results for both unfiltered and filtered data show a significant variation of 8% in customer loyalty as explained by CRM dimensions resulting in an additional hypothesis being supported. Further, findings revealed that preliminary investigation prior to real data analysis aid in reducing drastically the possibilities of errors or abnormalities, and showcase all challenges that a researcher may come across in the processes of actual analysis. Hence, studies have



continuously advised on the need for researchers to place a priori pre-test investigation as a condition for building data confidence in research.

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National Insecurity and Investment in Nigeria

¹ Wilson Ebhotemhen
(harlyns1974@gmail.com)

¹ Abere Benjamin Olusola
(abere.bejami@edouniversity.edu.ng)

¹Department of Economics Edo State University Uzairue, Iyamho – Uzairue Edo State, Nigeria.

Abstract

This research examined the impact of National Insecurity on Investment in Nigeria from the period 1986-2020. In a bid to actualize the main objective of the study, data were collected from secondary sources such as various editions of CBN statistical Bulletin, National Bureau of statistics and reports from the Nigerian military budget. The model of this study was built based on Keynes National income model and data were analyzed using Augmented Dickey-Fuller (ADF) Unit Root test, Johanson co-integration test and Error Correction Model. The selected variables (i.e Investment, Government Expenditure on Emergency cases, Government Expenditure on Ammunition and Government Expenditure on Amnesty) had a co-integrating relationship indicating a long run relationship among the variables used in the study. The coefficient of the Error Correction Model is correctly signed as it is negative but statistically significant at the 0.05 level which is an indication that any disequilibrium in the system will be restored at the speed of 34% approximately. Based on the conclusion of this study, it is recommended that government and its agents should look beyond the issue of tribalism, religious interests and Nepotism and focus on a quick response to increasing budget allocations for the purchase of required ammunitions to tackle the insecurity in Nigeria. The government should also set up agents to effectively monitor the proper utilization of the funds allocated for this purpose.

Keywords: Insecurity, Investment, Government, Spending, Amnesty, Ammunitions.

1. Introduction

In recent times the issue of national insecurities has posed a lot of threats to the citizens of Nigeria ranging from Boko haram insurgencies, Fulani herdsman killings and kidnapping activities which have had a lot of implications on economic activities in the economy. The number one responsibility of any government is the provision of adequate security without which investment which is the engine of economic growth would be impossible. (Nwanegbo & Obigo, 2013). According to Punch “Nigeria newspaper of October 31st 2018”, over 1.1 million Nigerians have stripped into extreme poverty through loss of job, loss of business and displacement from Boko-haram insurgency areas in just four months which brings the total number of Nigerians living below poverty mark of \$1.90 per day to 88million, overtaking India. In June 2020, the world poverty clock estimated that 95,816,700 poor people are currently living in Nigeria, a number that accounts for about



49% of her total population of 201million. If the issue of insecurity lingers in Nigeria poverty is likely to get worse as the gap between the rich and the poor has continued to widen. Moreover, the issue of growing rate of unemployment in Nigeria increased to 27.30 percent in the third quarter of 2019 from 23.10 percent in the second quarter. According to Ekpo (2016), a country that is experiencing insecurity will be characterized by low investment which is the fundamental factor for unemployment in any economy. Nigeria is reputed to be buoyantly blessed with enormous minerals and human resources. Nevertheless, the country has been known to be high-risk market for insecurity thus affecting investment and economic growth.

Most of the researches in the area of insecurity in Nigeria such as Bloomerg, Hess and Weerapana (2004), Sandler and Enders (2004), Ajibola (2016), Achimba, Ighonnerho and Akpor (2013) etc. have not taken a deep investigation into the Intervention of the government through spending to curb national insecurity. Therefore, this study seeks to fill the gap in literature in the area of quick intervention of the government to the issue of war and unrest using Government Spending on Emergency Cases, Government Spending on Ammunitions and Government Spending on Amnesty as national insecurity variables. This is the problem of this study. The objectives of this study are to investigate the short and long run relationships between national insecurity variables (such as government expenditure on emergency case, government expenditure on ammunitions and government expenditure on amnesty) and investment in Nigeria. The statement of hypothesis for this study is H_0 : There is no short and long run relationship between national insecurity and investment in Nigeria. Data were collected from secondary sources such as various editions of CBN statistical Bulletin, National Bureau of statistics and report from Nigerian military budget from 1986 to 2020. It is against this background that this study therefore prepares to critically provide a comprehensive analysis of national insecurity and its resultant effects on investment in Nigeria, while other studies on insecurity have looked into numbers of death rolls in the country due to national insecurity, this study shall examine government Expenditure on emergency case of insecurity government Expenditure on ammunitions and government Expenditure on amnesty as national insecurity variables.

2. Literature Review

Conceptual Clarification

Achumba (2013) defines insecurity from two perspectives; firstly, insecurity is the state of being open or subject to danger or threat of danger, where danger is the condition for being susceptible to harm or injury. Secondly, insecurity is the state of being exposed to risk or anxiety, where anxiety is a vague unpleasant emotion that is experienced in anticipation of some misfortune. These definitions of insecurity underscore a major point that those affected by the situation are not only uncertain or unaware of what would happen but they are also vulnerable to the threats and dangers if they occur. (Ajufo, 2013); Rejda and Haley (2014) see economic insecurity as a chronic state or condition during which an individual or family has insufficient financial resources to satisfy basic needs and wants including



food, housing, medical care, transportation and similar needs. Insecurity in a general term refers to a state of being subjected to fear, threat, danger, molestation, intimidation, harassment etc. in all aspects; for example, insecurity can be conceived as threats to the state which often accounted for the race for arms and nuclear weapons to defend the state as opined by Ajodo-Adebanjo and Okorie, .(2014). According to Saliu Luqman and Abdullahi. (2007), human threat to life emanates not only from situation of violent conflicts but also other non-conflict sources. Thus insecurity is a situation of fear or anything that causes fear, harm or has the capability to cause fear, harm, injury or destructions to an individual, group or nation. The concept of insecurity connotes different meanings such as absence of safety, danger, hazard, uncertainty, lack of protection and lack of safety: According to Beland (2005) insecurity is a state of fear or anxiety due to the absence or lack of protection. Beland (2005) defined insecurity “as the state of fear or anxiety stemming from a concrete or alleged lack of protection”. It refers to lack or inadequate freedom from danger. This definition refers to physical insecurity which is the most visible form of insecurity and its feed into many other forms of insecurity such as economic security and social security. In the context of this research work, insecurity is defined as a breach of peace and security whether historical, religious, ethno-regional, civil, social, economic and political that contributes to recurring conflict and leads to wanton destruction of lives and properties. According to (Ikeke, 2014) violent conflicts are performances of thoughtful violence leading to unswerving attack on people, physical or psychological truthfulness or psychological integrity. This author argues further that it involves all kinds of homicide, extermination, confrontation, lawbreaking, massacre, assassinations and terrorism Violent conflicts emerge from all type of coercive or brutal action concerning bodily or emotional misery when one or two persons, groups, parties, communities involved in discrepancy that leads to dispute and struggle over resources. In this category are cases of armed robbery, abduction for ransom, stealing, torture, political riots and assassination, rape, religion and ethnic violence (Edigin, 2010; Esivi, 2016; Ubhenin, 2013) etc.

Unemployment has been the singular view, some economists have for economic insecurity; Scheve and slaughter (2002) argued that economic insecurity among workers may be related to deteriorating employment and wage interaction with employers. However today widespread insecurity requires economists and policy makers to look beyond a few aggregate statistics. The concept of growth is used in all fields of human endeavour. In economics, the concept refers to economic growth (Osinubi, 2005). According to him, growth is often interpreted by many Economist to mean increase in the volume of goods and services (output) produced by a country for a given period of time usually, one year. Some economists also viewed economic growth quantitatively by measuring output. Kinderberger (1965) and Jhingan (2007) defined it simply as more output. Economic growth is measured by the amount of increase in goods and services produced in a country.

In Keynesian terminology, investment refers to addition to capital equipment which enables increase in the production of capital goods (Jhingan, 2003). The term, investment,



according to Ibenta (2005), may be defined as accumulation and commitment of fund in financial and real assets with the objective of obtaining income over time. He further posits that it is a commitment of resources made in the hope to realising benefits that are expected to occur over a reasonable period of time in the future. Investment can also be referred to as the production of capital goods (Heim, 2008). Investment thus includes new plant and equipment, construction of public works like roads, dams, buildings, etc. Investment can be defined as the outlay of money for future use (Agu, 2015). On the bases of the above definitions, investment involves an outlay of fund with the expectation of future income. Investment can be divided into autonomous and induced investment. Autonomous investment is service based and not induced by demand as it is not influenced by immediate returns while induced investment is largely profit motivated. Autonomous investment is in the purview of the public sector and therefore propelled by the government. Thus investment is made by the public sector and the private sector. All government capital expenditures form public investment. Private sector investment include all investment made by the private sector, these include domestic investment, and foreign private investment. According to Adetiloye and Adeyemo (2012), real domestic investment is expenditure made to increase the total capital stock in the economy. This is done by acquiring further capital producing assets and assets that can generate income within the domestic economy. The domestic investment is the gross fixed capital formation in the economy. This can be divided into private sector capital formation and public sector capital formation. The domestic private sector investment has also been proxied by credit to private sector from the financial system. However, foreign private investment comprised foreign direct investment and foreign portfolio investment. Foreign direct investment (FDI) is a direct investment into production or business in a country by an individual or company of another country, either by buying a company in the target country or by expanding operations of an existing business in that country. Foreign direct investment is in contrast to portfolio investment which is a passive investment in the securities of another country such as stocks and bonds. World Bank (1996) conceptualized Foreign Direct Investment (FDI) as investment that is made to acquire a lasting management interest (usually 10% of voting stock) in an enterprise operating in a country other than that of the investors. Such investment may take the form of either “Greenfield” investment (also called mortar and brick investment) or merger and acquisition (M&A), which entails the acquisition of existing interest rather than new investment. In corporate governance, ownership of at least 10% of the ordinary shares of voting stock is the criterion for the existence of a direct investment relationship. Ownership of less than 10% is recorded as portfolio investment (Suhendra & Anwar, 2014).

Terrorism and Insecurity in Nigeria

In recent times, Nigeria has witnessed an unprecedented level of insecurity and terrorism since the advent of the present democratic dispensation. The pattern of insecurity has been regionalized: militia groups in the south, insurgency in the north, kidnapping in the east and south, ritual killings in the east and west, political and non-political calculated



assassinations across the nation. The regional pattern of insecurity has given rise to regional security formation in the country in a bid to curtail the alarming rate of insecurity. Boko Haram emerged as radical fundamentalist sect, formed by Ustaz Mohammed Yusuf, in 2002 in Maiduguri, Borno state. In 2004, it moved to Kanamma, Yobe state, where it set up a base called Afghanistan (Ikenga and Efebeh, 2013). The sect officially calls itself “jama’atul Alhul Sunnah Liddo’ wati Wal Jihad” Nwanegbo and Odigbo, 2013; Ikenga and Efebeh 2013; Meehan and Speier, 2011).

Empirical Review

A plethora of studies have shown that insecurity resulting from terrorism negatively affects the economic growth of many countries. For instance, Blomberg, Hess and Weerapana (2004) discover that terrorists activities’ rate is quite higher in the high income countries during periods of recession. Using panel regression analysis, these authors found that terrorism had a negative impact on economic growth. They concluded that the impact is less significant in advanced economies than developing countries. Similar results were obtained by Sandler and Enders (2004) when they compared the impact of terrorism on developed and developing countries, reason being that developed countries had vast economies and any terrorist activities, may result in reallocating resources among various sectors of the economy which is not the case with developing countries. Bloomberg, Hess and Orphamides (2004) carried out a study on 177 counties ranging from 1968 to 2000 (pooled cross section data). The panel estimates shows that insecurity and terrorism has a small effect on per capita income growth for all samples, and it reduces investment and consequently exportation of goods to foreign economy. Tavaries (2014) carried out another study on the cost of insecurity, using sample size ranging from 1987 to 2001. The result showed that insecurity had a significant but negative impact on GDP growth. Crupta (2004) studied the impact of armed conflict and terrorism on macroeconomic variables using sample size of 68 low and middle income counties. It was observed that conflict indirectly reduces economic growth by increasing defense spending share of government expenditure. Eeksterin and Tsiddon (2004) investigates the effect of terrorism on the macro economy of Isreal, using quarterly data from 1980 through 2003. Applying vector autoregression (VAR), the result showed that terrorism has a significant negative impact on per capita GDP, investment and export.

Ganbulloer and Sandler (2009) in their study of terrorism and conflict on growth in Asia 1970-2004 observed that transactional terrorism attacks had a significant growth limiting effect, it reduces growth by crowding in government expenditures. Achimba, Ighomereho and Akpor (2013) in their study on insecurity in Nigeria and its implication for business investment and sustainable development indicated that insecurity challenges in the country is enormous and complex and would continue to be, if the situation remains unabated. Ajibola (2016) focuses on economic growth amidst insecurity in Nigeria with the effort to explain the impact of security on investment measured by economic growth using time series data from 1981 to 2014. On real gross domestic product, Total Expenditure on security, gross fixed capital formation, Total labour force, corruption perception index and



poverty index to show the empirical relationship through the use of multiple regression (OLS) method. The study found out that 90% systematic variation in real GDP is caused by variation in total labour force, total expenditure on security, corruption perception index, poverty index, unemployment rate, inflation rate and gross fixed capital formation. The study showed that security and other related variables do not only contribute positively to economic growth in Nigeria but its impact on economic growth is strong and statistically significant. Also, Nigeria’s potential GDP growth rate is 11% while the actual growth rate is 6% which implies that the country’s economy is different due to the level of insecurity, corruption, unemployment and poverty.

3. Methodology

The study uses annual time series data. The time span covered is 1986 to 2020. The data were obtained mainly from various secondary sources such as National Bureau of Statistics, Annual Report and Statement of Accounts and other documents of the Central Bank of Nigeria. On the basis of this study, Keynes (1936)’s model on theory of free market demand and supply forces which could stabilize an economy through increase in economic activities in order to move an economy from its depression which occurred as a result of the global war characterized by insecurity surrounding human living was adapted. Therefore, Keynes demonstrated that investment growth depends on domestic demand and the net exports. In his analysis, he obtained the specification below:

$$IVT = f(NEX, GSE, GSA) \dots\dots\dots 1$$

Where IVT is investment, NEX represents net export, GSE is government expenditure on emergency, GSA denotes government expenditure on ammunitions. All these were introduced in order to tackle the insecurity affecting human existence; f is a functional notation. In this study, equation (1) above is modified by replacing net export with government expenditure on amnesty (GSM). This is because government expenditure on amnesty will enhance output productivity through the willingness to forgo crimes thereby increasing output returns in the productive economy, hence it is a determinant of investment in the economy. The error correction model (ECM) is hereby stated thus:

$$D(IVT_t) = \alpha_0 + \alpha_1D(GSE_t) + \alpha_2D(GSA_t) + \alpha_3D(GSM_t) + \alpha_4ECM_{t-1} + \epsilon_t \dots\dots\dots 2$$

Where D is the first difference operator, t is the time, $\alpha_0, \alpha_1, \alpha_2, \alpha_3$ and α_4 are the parameters to be estimated, ECM_{t-1} is the error correction term, ϵ_t is the equilibrium error term with zero mean and constant variance and every other variable is previously defined.

The time series properties of the data are analyzed using the Augmented Dickey-Fuller (ADF) and unit root test of Dickey and Fuller (1979). The test for the co-integration was conducted using the Johansen (1988) maximum likelihood procedure. If the computed value of trace statistic and max-eigen statistic exceed critical values, one can reject the hypothesis of no co-integration and vice versa. Since equilibrium is a long run phenomenon, there is a possibility that the model may deviate from the long-run equilibrium within the given short-run period. In order to estimate such deviation, the study



finds error correction mechanism appropriate. If the coefficient of $ECMt_{t-1}$ is non zero, it shows that the model is not in equilibrium. Suppose the coefficient of $ECMt_{t-1}$ is positive, it shows that the model is diverging from equilibrium. The positive coefficient of $ECMt_{t-1}$ indicates that the model will return to equilibrium but only after a long period of time. Conversely, a negative α_4 shows that the model is converging towards the equilibrium and it will be restored to equilibrium in the short period. Based on the theoretical framework of this study, the coefficients of government expenditure on emergency, government expenditure on ammunition and government expenditure amnesty are expected to be positive.

This study employed Error Correction Mechanism approach to analyze the relationship between investment, government expenditure on emergency care, government expenditure on ammunitions and government expenditure on amnesty. All variables were tested to confirm the absence or presence of unit root problems using Augmented Dickey-Fuller (ADF) in order to avoid spurious regression. The ADF is an adjusted type of dickey and fuller (1981) test for stationarity. It is used to test for unit root in such situations where the disturbance in the series, t , do not follow a white noise process. In such cases, the error in the series may be serially correlated. The ADF equation for testing unit root is described below:

$$\Delta Y_t = \beta_1 + \beta_2 t + \delta^* Y_{t-i} + \sum_{i=1}^p \alpha_i \Delta Y_{t-i} + \epsilon_t \dots\dots\dots 3$$

Where:

$$\alpha_i = \sum_{k=i+1}^p \delta_k \quad \text{and} \quad \delta^* = \left(\sum_{i=1}^p \delta_i \right) - 1 \dots\dots\dots 4$$

Where: ϵ_t represents Gaussians white noise which is assumed to have a zero mean but possible serial correlation, Y denotes series to be regressed on time, “ t ,” β for the trend parameter, and μ for intercept. P denotes the maximum number of lags which is decided using Akaike Information Criteria (AIC). The null hypothesis is given as $H_0: \beta_1 = 0$ and $\beta_2 = 0$ meaning there is unit root against the alternative $H_1: \beta_1 \neq 0$ and $\beta_2 \neq 0$ meaning there is no unit root. This preference creates space for higher order of auto-regressive method (Greene 2003). The unit root equation stated above basically permits a null hypothesis test for trend, trend and intercept,

4. Results

Descriptive Statistics for the Model

The data for the study was compiled into a single table, which is shown in Table 1 because they are all midway between the maximum and lowest values, the mean values produced are appropriate gauges of central tendency. In the Nigerian economy, Investment as a percentage of Total Productivity averages around 10.97%, while the highest and lowest values are 15.10 and 7.81 respectively. For Government Expenditure on Emergency Case the average value obtained is 20.75%, with the maximum and minimum values being 28.16 and 15.97 respectively. For Government Expenditure on Ammunition the average value in



Nigeria is 4.98% with a maximum and minimum being 6.85 and 2.34 respectively. For Government Expenditure on Amnesty the average value obtained is 4.77%, with the maximum and minimum values being 6.82 and 1.16 respectively.

Table 1: Descriptive Statistics

Variables	Obs	Mean	Median	Std Dev.	Maximum	Minimum
LIVT	34	10.97196	10.40624	2.282840	15.10325	7.814148
LNGSE	34	20.75390	17.72375	4.754637	28.16448	15.96729
LNGSA	34	4.976196	4.781624	1.490257	6.848005	2.341806
LNGSM	34	4.765344	5.536978	1.809989	6.815201	1.163151

Source: Computed by the Authors

Unit Roots Outputs

Since the study used time series data, the first step is to establish the stationarity or otherwise of the variables, a unit root test was carried out using the ADF methodology.

Table 2: Summary of ADF Unit Root Test with trend and intercept

Variable	ADF test statistics	Mackinnon Critical value @ 5%	No of time difference	Remark
LN IVT	-4.031607	- 2.974853	I (1)	Stationary
LN GSA	-7.649831	-2.954021	I (1)	Stationary
LN GSE	-6.224221	-2.954021	I (1)	Stationary
LN GSM	-6.359154	-2.960411	I (1)	Stationary

Source: Computed by the Authors

The results of unit root test above indicate that the variables used in the study on Investment, Government Spending on emergency Case, Government spending on Ammunitions and Government Spending on Amnesty are integrated with the same order of I (1) respectively – This means that the variable are stationary at their respective first difference

Co-integration Test Results

Having established the stationarity of the variables, the study determine the existence of a long run equilibrium relationship among the variables in the model. To undertake this, it employs the Johansen Co-integration techniques. The results are presented below:

Table 3: Johansen Co-Integration Test. (Trace Statistics)

Hypothesized number of (ECS)	Eigen value	Trace statistics or likelihood ratio	5% critical value	Prob**
None*	0.606752	62.04485	47.85613	0.0014
At most 1*	0.460969	31.24548	29.79707	0.0338
At most 2	0.221397	10.85205	15.49471	0.2207
At most 3	0.075586	2.593655	3.841466	0.1073

Source: Computed by the Authors

From Table 3 above there exist a long run equilibrium relationship in the model. The trace statistics shows that there are 2 Co-integration equations among series since the likelihood ratio (62.04485) is greater than 5 percent critical value (47.85613) at None hypothesised No of Ecs (None*) and (31.245448) is greater than (29.79707) at 5% critical value.



Table 4: Johansen Co-Integration Test (Maximum Eigen Statistics)

Hypothesized No of Ecs	Eigen Value	Max Eigen Statistics	5% Critical Value	Prob**
None*	0.606752	30.79937	27.58434	0.0186
At most 1	0.460969	20.39342	21.13162	0.0632
At most 2	0.221397	8.258399	14.26460	0.3530
At most 3	0.075586	2.593655	3.841466	0.1073

Source: Computed by the Authors

From Table 4 above, it shows that there exist a long run equilibrium relationship in the model using the Maximum Eigen statistics (30.79937) which is greater than 5% critical Value (27.58434) at None hypothesized No of ECS (None*). All the variables therefore stand significant. Having established the long run relationship among the variables in the model, we switch to the short run Error Correction Model

Table 5: Long Run Results

Variable	Coefficient	Std. Error	t statistics	Probability
C	-4.147816	1.920873	-2.159339	0.0387
LNGSE	-0.089364	0.137155	-0.651554	0.5195
LNGSA	1.154017	0.387312	2.979552	0.0056
LNGSM	1.045255	0.329709	3.170230	0.0034

Source: Computed by the Authors

From Table 5 above, the results of the long-run shows that GSE is inversely related to Investment which is contrary to the a priori prediction. However, GSA and GSM d exhibit direct relationship conforming to the a priori expectation. In addition, the value of the GSA and GSM are statistically significant at 5 per cent level.

Error Correction Model (ECM)

The error correction model measures the speed of adjustment to equilibrium. The result of the Error Correction Model (ECM) conforms to the rule if the value of its coefficient is negatively signed and also statistically significant if the p-value is found ≤ 0.05 . The result obtained demonstrate that the present value of the dependent variable will adjust back to long-run equilibrium in the independent variable at speed of 34 per cent approximately. A higher percentage of ECM indicates a feedback of that value or an adjustment of that value from the previous period disequilibrium of the present level of dependent variable and the present and past level of the independent variables. The over-parameterized ECM is being made by the lagged value of each variable while the parsimonious ECM consider the variables that adjust rapidly to equilibrium among the lagged variables. Table 7 and 8 below show the result of both over parameterized and parsimonious ECM on the specified parameters.

The Table 6 and 7 above show the over-parameterized and parsimonious results. The negative sign of ECM values in both table 6 and 7 indicate that the ECM is appropriately signed also statistically significant at the 0.05% level. This implies that the present value of 0.3360 has a feedback of about 33.60% from the previous period of disequilibrium to the



present level of IVT in a bed to determining causality between the past level of IVT and the present and past levels of GSE, GSA and GSM.

Table 6: Over-parameterized ECM

Variable	Coefficient	Std. Error	t statistics	Probability
C	0.214908	0.275102	0.781193	0.4454
D(LNGSE)	-0.384829	0.209162	-1.913031	0.0727
D(LNGSA)	0.300276	0.265558	1-130738	0.2739
D(LNGSM)	0.171180	0.221230	0.773765	0.4497
D(LNGSE(-1))	0.215687	0.186702	1.155248	0.2640
D(LNGSA(-1))	0.055433	0.265299	0.208944	0.8370
D(LNGSM(-1))	-0.098281	0.269841	-0.3642117	0.7202
D(LNGSE(-2))	-0.021152	0.184655	-0.114547	0.9101
D(LNGSA (-2))	-0.178278	0.238337	-0.748009	0.4647
D(LNGSM(-2))	0.177744	0.271014	0.655850	0.5207
D(LNGSE(-3))	-0.73523	0.194338	-0.378326	0.7099
D(LNGSA(-3))	0,278055	0.249640	1.113823	0.2809
D(LNGSM(-3))	-0.162568	0.209388	-0.776398	0.4482
(ECM(-1))	-0.060881	0.146339	-0.416028	0.6826

Source: Computed by the Authors

Table 7: Parsimonious ECM

Variables	Coefficient	Std Error	T. Statistics	Probability
C	0.235999	0.269742	0.874908	0.3891
D(LNGSA)	0.512816	0.218568	2.346254	0.0263
D(LNGSE(-1))	0.193727	0.192274	1.007557	0.3223
D(LNGSM(-1))	-0.211628	0.186788	-1.132981	0.2668
ECM (-1)	-0.336052	0.126066	-2665688	0.0126

Source: Computed by the Authors

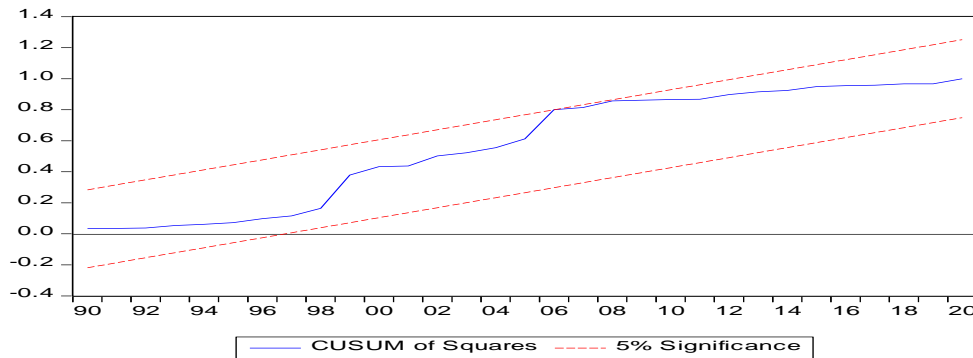


Figure 1: The Stability Tests

The result of CUSUM test above obtained from the model showed that there is evidence of stability in the coefficient at 5% level of significance in CUSUM Test since the cumulative Sum is located inside the area between the two critical lines.



Discussion of Finding

The result of our findings indicates inverse relationship between Investment (IVT) and Government Spending on Emergency Case (GSE) in the long run while having a positive relationship in the short run. The short-run result conforms to the a priori expectation of positive relationship between Investment and Government Spending on Emergency Case, this is in line with the work of Tavaries (2014) who examined the cost of insecurity, using sample size ranging from 1987 to 2001, and found the result same. The positive relationship between Investment and Government Spending on Ammunitions (GSA), is also in line with the expected prediction as found in the short-run and long-run estimates. This finding is in agreement with the results of Achimba *et al.* (2013) who examined the same topic. There is also an indication of positive relationship between Investment and Government Spending on Amnesty both in the short-run as well as the long-run estimates. Both results therefore conform to the a priori expectation in the study and the result conforms with the work of Ajibola, (2016) who investigated similar topic to the study: “unemployment as a rationale for insecurity with special reference to the Nigerian economy”.

5. Conclusion and Recommendations

Our major conclusion in this study is that the primary role of any government is to provide adequate security of life and properties of her citizens and Nigeria is not an exception. In an economy like Nigeria where there is National insecurity of killings, kidnapping of people and destruction of farmland and plantations by Fulani herdsmen is a re-occurrence issue. Urgent means must be taken to curb the situation speedily. The government must put in adequate efforts to spend on emergency case of insecurity, procure ammunitions to the Military troops and be ready to spend on Amnesty in Nigeria. On this note, this study recommends that government and her agents should, look beyond the issue of tribalism religions interest and nepotism and be ready to rescue the dying masses in the hands of Boko Haram, Fulani Herdsmen and other hoodlums in Nigeria. Government should make a rule of law in Nigeria stating that any leader found sponsoring this groups of hoodlums in Nigeria shall be executed. Every Religion” Tribe and political zones must form a formidable group such as Amotekun in the Western Nigeria to assist the government to combat insecurity in Nigeria. Military Generals and Boss should use the fund released to them by the government judiciously, honestly and promptly in order to save life and properties of citizens in Nigeria and make investment to grow for economic development.

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Foreign Investment in Nigeria: Surmounting the Challenges of Domestic Environment through Review of Laws/Policies

Chinyere Rita Agu
(ritachichiben@yahoo.com)

Nigerian Institute of International Affairs, Lagos, Nigeria

Abstract

Foreign Direct Investment (FDI) is one of the critical source of capital inflow into a country. Portfolio investment, foreign loans and trade credits are other sources of FDI. The cumulative effect of the agreements entered by Nigeria with the international body are the instruments/documents recognized by law which is a demonstration of Nigeria's efforts and preparedness to attract and protect foreign investment. In spite of the effort, there still continues to be a very slow and low inflow of foreign investment to Nigeria. Resolving these impediments is the aim of this paper and it recommends among others that government should imbibe the spirit of genuine attitudinal and policy change that would create enabling environment for Nigerians and foreign investors to thrive.

Keywords: Foreign Investment, Economic Development, Human Rights, Globalisation, Political Instability

1. Introduction

Over the years, the world superpowers have called on the developing and under developed countries to embrace globalisation (Orji *et al.* 2021). The call was made in order to improve on their predicament as they aspire to be like one of the developed countries. This of course implies that, there is need for liberalisation whereby the openness to the world economy would bring about the needed economic development through stimulation of variables, which is basically trade and investment (Orji *et al.* 2021). Investment is the most strategic factor in the process of economic development and as such the need for capital inflow into an import dependent country like Nigeria is crucial. Most people are more concerned with the issue of foreign investment in Nigeria, and the role assigned to globalisation in foreign investment cannot be over emphasized since foreign investment is the largest single source of external financing. Since no nation in the world is economically self-sufficient, the need for the needed amount of foreign resources beyond a country's border becomes inevitable. Foreign Investment represents a veritable source of foreign exchange and technological transfer, especially to a developing economy of Nigeria. It can be analysed in terms of new equity capital (change in foreign share capital), re-invested earning (unremitted profit), trade and supplier's credit, net inflow of borrowing and other obligations from parent company or its affiliates. Through foreign investment, a country benefits from transfer of skill and technology, organizational and management expertise,



employment generation, access to foreign markets. Nigeria since after her independence in 1960 is still looking for ways to attract foreign investment. Amazingly, substantial portion of Military Regime and past Civilian Governments were committed to the search for foreign investment partners for the nation. Incidentally, the quest for foreign investment is not restricted to Nigeria alone. Quite a good number of developing countries and even developed countries depend on foreign investment for the development of their economies.

Obviously, the economy of most developing countries, particularly the African States are highly characterized by low income earnings, high level of unemployment, high inflation rates, high level of dependency on imported food and other products, very slow rate of growth and development, high mortality rate and poor standards of living. Given the foregoing situation, foreign investment becomes an important instrument to be used in achieving sustainable level of economic growth and development amongst the developing nations and invariably, Foreign Direct Investment (FDI) “has become a vital source of economic development for the African continent (NEPAD-OECD, 2010). According to World Investment Report 2012, FDI inflows to Africa as a whole declined to \$42.7 billion. However, the decline in FDI inflows to the continent in 2011 was caused largely by the fall in North Africa; in particular, inflows to Egypt and Libya, which had been the major recipients of FDI, this came to a halt owing to their protracted political instability (UNCTAD, 2013). However in 2013, foreign direct investment increased by nearly 7 percent to an estimated \$56 billion, a fifth of which went to South Africa making South Africa the top recipient of the FDI in Africa (UNCTAD, 2014). FDI inflows to South Africa doubled \$10.3 billion in 2013 according to United Nations Conference of Trade and Development reports (UNCTAD). While other African countries like Nigeria and Ghana saw decline in investment (UNCTAD, 2014). Most of the rise in FDI inflows to South Africa was due to Greenfield or new investment, particularly in the consumer sector. In respect to Mozambique where companies like Brazil’s *Vale*, London listed *Rio* and Italy’s *Eni* were developing huge with off shore gas and coal deposits which was another strong performance, attracting inflows of \$7.1 billion and more than 30% percent from a year ago (UNCTAD, 2013).

However, the COVID-19 pandemic had a significant and an adverse impact on foreign direct investment (FDI) in Africa as flows to the continent declined by 16% in 2020 to \$40 billion, from \$47 billion in 2019 (UNCTAD, 2021); This is due to Cascading economic and health challenges caused due to the pandemic combined with low prices of energy commodities weighed heavily on foreign investment to the continent. In respect of FDI outflows, Africa contributes less than 1% of global FDI outflow. Of the \$1,323 billion in global outflows in 2010, \$388 billion (29 percent) was attributed to developing and transition economies. Six developing and transition economies were among the top 20 investors in 2010 (none from Africa). Half the top 20 host economies in 2010 were from developing and transition economies (none from Africa). Unfortunately, due to the impact of the COVID-19 pandemic FDI outflows from Africa fell by two thirds in 2020 to \$1.6 billion from \$4.9 billion in 2019 (UNCTAD, 2021). Data from the Central Bank of Nigeria



(CBN) indicates that Foreign Direct Investment (FDI) inflows for 2012 amounted to U.S \$7.03 billion, representing a 21 percent decrease from the U.S. \$8.9 billion recorded for 2011(CBN, 2013).Furthermore, inflow to Nigeria in 2013 declined at about 20% to \$5.5 billion largely due to asset sales by foreign companies such as Royal Dutch Shell and Chevron. In 2014 and 2015, Nigeria received an average of \$6 billion dollars in foreign direct investments inflow annually (CBN, 2016). Recently, the total value of capital importation into Nigeria declined year-on-year by 31 percent to \$6.7 billion in 2021, the lowest in five years, according to the National Bureau of Statistics (NBS) (Bailey & Tajudeen, 2022). The cumulative effect of Nigerian legislations, bilateral and multilateral agreements entered into by Nigeria and the international instruments/documents recognized by Nigeria as binding towards the regulation of foreign investment in Nigeria, is the demonstration of Nigeria's efforts and preparedness to attract and protect foreign investment. In spite of the foregoing, there still continues to be a very slow and low inflow of foreign investment to Nigeria.

2. Theoretical Inclinations

The primary task of this section is to examine theories and major issues which relate to this paper. A good understanding of these theories are necessary to enable one appreciate the paper in the subsequent sections. In terms of juridical inclination, the study's approach is dominated by the influence of natural law theory, because foreign investment derives its root from international law. The naturalist strand represented by Lauterpacht's works sees the primary function of all law as concerned with the well-being of individuals, and advocates the supremacy of international law as the best way available of attaining this (Shaw, 2002). This paper will also rely on the Middle Path Theory. Middle Path Theory posits that foreign investment must be protected but only to the extent of the benefits it brings to host State and the extent to which foreign investors have behaved as good corporate citizens in promoting the economic and social objectives of the host country (Sornarajah, 2010). The theory calls for a mixture of regulation and openness in dealing with foreign investment and cautions against too much openness and too much regulation on intervention (Seid, 2002).

3. Impediments to Foreign Investments

In Nigeria today, a good number of factors have been identified as constraints to the inflow of foreign investments namely, expropriation, political instability, corruption, existence of unfavourable laws, inconsistent government business policies, lack of infrastructural development, weakness of the legal regime for enforcement of foreign judgments, financial crimes such as advance fee fraud, social insecurity, violence such as hostage taking and kidnapping in many parts of Nigeria and terrorism (Bernard & Iyaji, 2011). These impediments not only discourage intending investors but also frighten existing investors thereby making them to close shop and flee the country. It has been reported that as a result of the prevalence of hostage taking activities in the Niger Delta area, Imo State Government lost about Eight million, five hundred thousand dollars (\$8,500,000) worth of Chinese investment as the investors were forced to leave the area (Odume, 2007).



Meanwhile, one of the modern expositions on impediments to foreign investment that has received wide acceptability is that given by (Nnabue, 2011) thus:

The actions of militants from the Niger Delta, (MEND), Area boys, Bakassi, Boko-Haram, to mention but a few, cast doubt on the security of Foreign investments in Nigeria. On the other hand, the seeming lack of proper grip on the principles of rule of law and the judicial system by the judiciary, informs a serious impediment to a would be foreign investor...From the legislative quarter, flows the inconsistencies of incessant and arbitrary changes in policy and invocation of bans...

However, based on the foregoing it is obvious that impediments militating against the much desired foreign investment abound. A breakdown of FDI in Nigeria over the last 10 years showed that in 2012, it stood at \$2.60 billion. It declined to \$1.27billion in 2013. It went further down to \$1.4billion in 2015, \$1.04billion in 2016, \$981.75billion in 2017, \$1.19billion in 2018, \$934 million in 2020 and \$698.78million last year (NBS Report, 2021).The NBS report also indicated that 24 states across the six geopolitical zones failed to attract any foreign investment in 2020 (NBS Report, 2021). This is contrary to claims by some of the state governors. The failure of the Federal Government to address the rising insecurity is a key factor for the low inflow of FDI into the country. Other factors responsible for the poor FDI include the issue of foreign exchange and inconsistent government policies. Undoubtedly, investors are reluctant to invest in a country where the ease of doing business is poor and the investment climate is uncertain. Investors are likely to invest in a country with economic and political stability, stable power supply. Unfortunately, Nigeria's business environment is currently not considered 'friendly' for good return on investment. These are some of the issues the government should address. Not long ago, the Director-General of the World Trade Organisation (WTO) and former Minister of Finance, Dr. Ngozi Okonjo-Iweala, expressed concern over the drastic drop in foreign investments in Nigeria. She said the cost of trade in the country remains too high to attract foreign and domestic investments in the economy. Her worry delivered virtually during the recent two-day mid-term ministerial review retreat at the Presidential Villa, Abuja, came against the background of statistics showing that foreign portfolio investment inflow in Nigeria dropped to N262billion year-on-year as at August 2021, from N470.2billion in the corresponding period of 2020 (The Sun, 2022).Total transactions for domestic and foreign components of the portfolio investments in the equities market in the Nigerian Stock Exchange as at August 2021 increased only marginally by 0.9 per cent to N1.213trillion as against N1.207trillion in the corresponding period in 2020. Though global foreign direct investments fell by 42 per cent, from \$1.5trillion in 2020 as a result of the effect of the COVID-19 pandemic according to data from UNCTAD Investment Trade Monitor, published in January, 2021, that of Nigeria was said to go beyond the pandemic (UNCTAD Investment Trade Monitor, 2021).



Foreign investors in Nigeria have been bedevilled by inadequate and insufficient legal framework for regulating foreign investment. On the other hand, Nigeria has witnessed the negative effects of unregulated investment and many Transnational/Multinational Corporations have been implicated in gross environmental and human rights abuses. The existing legal framework from pre-colonial Nigeria has proved to be quite inadequate in surmounting the attendant socio-economic, political and allied problems always associated with foreign investments. Foreign investors in Nigeria are usually deterred from investing their resources because of the unfavourable and poor legal framework in this aspect of the law. The Nigerian government has over the years instituted laws and policies aimed at attracting foreign investments, regrettably, these efforts have not yielded the expected results. It is pertinent to note that the Nigerian Investment Promotion Commission Act is the principal legislation on investment which applies to the totality of the Nigerian economy. The NIPC has the responsibility of assisting incoming and existing foreign investors by providing support services and guidance as may be required. This role entails acting as liaison between the enterprise and the relevant Government Departments, agencies and such other public authorities. In realising that the process involved in dealing with the separate government ministries and authorities has been made cumbersome by all the different bodies with varying authorities, the commission created One-Stop Investment Centre (OSIC) which includes the Corporate Affairs Commission (CAC), the Central Bank of Nigeria (CBN), Federal Ministry of Finance, and Immigration Services etc. It is submitted that what OSIC merely achieved is the inculcation or housing of all government agencies involved in issuing permits to investors without a harmonization of their functions, thereby leaving the problem unsolved.

Furthermore, it should be noted that neither failure to register with the NIPC nor failure to comply with the Act attracts a penalty. The commission also has no enforcement powers given to it under the Act. This is a serious omission in the Act that needs to be addressed urgently. Another area which needs to be looked at critically is the Immigration law of Nigeria which is governed by the Immigration Act and the regulations promulgated by the Minister Internal Affairs. It should be noted that the Immigration Act currently in use is outdated and unfit for the Nigerian state for instance, penalty for non-compliance with the Act is inadequate to deter potential violators of the law. Furthermore, there is no provision in the Act for monitoring the activities of these foreign investors from time to time. A supposed investor may in the guise of coming to do business in Nigeria come into the country and in the long run decide to indulge in varying negative activities that may jeopardize the economic interest of the nation. The Foreign Exchange (Monitoring and Miscellaneous Provisions) Act which is commendable in certain areas also poses a challenge to the Nigerian Economy. The Act gives overwhelming freedom to the investor by providing that the investor can repatriate his capital without further approval and that he has a right not to disclose the source of his capital. This invariably means even if the capital was derived from transactions inimical to the economy of the nation, he can still repatriate. In respect of land revocation, foreign investors express fears over the uncertainty arising



from the revocation of their rights over land as they are handicapped and left with little or nothing to run their business. Hence, disputes as to the amount of compensation are referred to the appropriate Land Use and Allocation Committee. Furthermore Section 47(2) of the Land Use Act precludes the courts from having jurisdiction to inquire into any question concerning or pertaining to the amount or adequacy of any compensation paid or to be paid under the Act.

The above provision is an ouster clause which is unconstitutional. Such provision does not attract foreign investors' confidence, the investors knowing that lands they acquire may be lost at any time to the government without recourse to the court. The National Office for Technology Acquisition and Promotion Act established the National Office for Technology Acquisition and Promotion (NOTAP) to register contracts/agreements which deal with the transfer and acquisition of foreign technology and issue a certificate of approval or refuse registration of same. The legislation raises doubt in the minds of foreign investors of the protection of their investment rights. For instance Section 6 of the NOTAP Act prohibits a contract which subjects a Nigerian to foreign jurisdiction in case of any dispute arising from the contract. This simply means that every dispute must be decided in Nigeria. It is also submitted that the above provision is conflicting with the Nigerian Investment Promotion Act which provides for settlement of disputes through amicable settlement, arbitration within the framework of any bilateral or multilateral agreement on investment protection to which the Federal Government and the country of the investor are parties or in accordance with any other national or international machinery for the settlement of investment disputes agreed on by the parties.

In respect of intellectual property law, it is submitted that Nigeria has a good intellectual property law however enforcement of existing laws remains a major problem. While these laws have been in existence, their enforcement has been weak and inefficient. On daily basis unscrupulous citizens infringe on rights of creators and authors and there is hardly any arrest. A major problem in Nigerian tax administration demanding urgent and decisive action is the phenomenon of multiple taxation of businesses especially, foreign-owned businesses in Nigeria. The tax system of Nigeria is fraught with the problems of multiple taxation, which is scaring away foreign investors as many of the tax laws and institutions are scattered and not harmonized. Also one of the major challenges of corporate social responsibility in Nigeria is that the concept has been espoused mainly as an optional and non-obligatory, which implies that there are no laws or policies guiding such obligations of foreign investors to Nigerians and her environment.

Most foreign investors often have difficulties in transacting businesses outside their jurisdictions on grounds of inability to access applicable norms existing in those other jurisdictions. For instance, Nigeria is ranked 169 out of 189 countries, on the World Bank's Ease of Doing Business rankings (World Bank's Ease of Doing Business Index, 2015). The index identified major drawbacks to doing business in Nigeria as sloppy taxation system, getting electricity, registering property and bottlenecks to starting business; and advocated



reforms in critical sectors of the economy. Corruption and lack of transparency also constitute various obstacles in this sphere. Studies have revealed that corruption has eaten deeply into the body system of Nigeria. Recently, in the year 2016, the Transparency International (TI) ranked Nigeria 136 out of 175 countries in its corruption perception for 2015, scoring it 27 percent in its review. The indication showed that the war against graft has remained moribund despite government's assurance that it was winning the battle. The organization which ranked Nigeria 143 out of 182 countries under its graft perception in 2011 defined corruption as the abuse of entrusted power for private gain which eventually hurts everyone who depends on the integrity of people in a position of authority". It does appear that corruption is generally endemic in developing economies. The drawback of corruption is enormous as the flow of foreign investments and gains accruable from profitable business operations stand threatened by the level of corruption, fraud, graft, misappropriation of authorized funds and mismanagement of authorized fund. Activities of fraudsters are a source of concern and they erode foreign investors' confidence in the system. The place of transparency, accountability and probity in reassuring and building the confidence of foreign investors cannot be over stated in the efforts put in place by the government in enacting anti-corruption legislations and putting in place the relevant agencies, namely, the Economic and Financial Crimes Commission, and the Independent Corrupt Practices Commission are good steps in the right direction. There is however, a great need to back up these efforts with a culture of accountability which will frown at and serve as the guarantee against corruption. It is also pertinent to note that the greater percentage of Nigeria's years as an independent nation witnessed the governance of the nation by the military with its attendant characteristic of incessant *coup' de tats*. To be more specific, between the years 1960 to 1999 the country enjoyed less than six years of democratic rule. Military dictatorship and economic development are compatible. The period of military rule in Nigeria drastically affected the country's ability to attract foreign investments.

One of the major concerns shared by foreign investors in respect of political instability is inconsistency in legislations and policies. With each regime there is always the likelihood of change in policies and legislations. Some of the changes in legislations and policies have the effect of indirect expropriation on investments.

Nigeria found herself in this kind of situation when the successive military regimes introduced inconsistent legislations and policies which hold direct bearing on foreign investment. A good example can be found in the indigenization policies that were introduced during the military regimes which drastically curtailed the influx of foreign investment into Nigeria. Even with the introduction of democratic rule in Nigeria, the way and manner elections are conducted many investors are yet to be convinced of the country's political stability and are still wary of bringing their investments into Nigeria.

The problem of national insecurity and unfavourable business climate is another major barrier to the inflow of foreign investment in Nigeria. The prevailing insecurity and the



incessant violent activities in the country have not only discouraged many intending foreign investors from investing in the country but have also prompted many foreign investors into shifting their investments to other jurisdictions. The picture of national insecurity was clearly pointed out by a report in these words:

“In the midst of rising interest and actual investment into Nigeria’s economy, security is emerging as the biggest challenge to sustaining the tempo of investment inflow The bombings and killings in the Northern Nigeria and kidnapping in the South are gradually emerging as a strand that Nigeria’s security agencies seem incapable of dealing with decisively. More worrisome is the silent suspicion that the security agencies are actually involved in the business of kidnap for ransom in the South while the North, the fear is that the security agencies may have been compromised and giving vital security information to the violent Boko Haram sect members ... (Abayomi, 2012)”

As the militant group, Boko Haram, continues its’ bombing of strategic places in the country, the World Investment Report (WIR) of the United Nations Conference of Trade and Development (UNCTAD Report, 2011) in its report stated that the Nigerian domestic economy has lost a whopping sum of N1.33 trillion Foreign Direct Investment (FDI) owing to the problem. According to the report, FDI flows to Nigeria fell to \$6.1 billion (N933.3 billion) in 2010, a decline of about 29 percent from the \$8.65 billion (N1.33 trillion) realized in 2009 fiscal year (UNCTAD Report, 2011:14). According to Okonjo-Iweala (Channels Television 2013) the total value of Foreign Direct Investment in Nigeria in 2012 was \$6.8bn, representing an increase of 17.24 percent. However analysts at Financial Derivatives Company Limited, in a report stated that the increase in the country’s FDI notwithstanding, it remained below par as a result of the Nigeria’s vulnerability to commodity price movements, insecurity and over-dependence on the oil and gas sector. The analysts noted that the FDI in Nigeria would have been significantly better without the security challenges in some parts of the country (Obong, 2013). The problem of national insecurity in Nigeria today has gone beyond that of political violence. Many foreign investors are subject of attack themselves. There are instances of kidnappings of foreign investors, almost on daily basis, particularly within the Niger-Delta area and the Northern part of Nigeria.

Properties and investments of the foreigners also come under direct attacks. Situations of oil bunkering and the destructions of oil installations of foreign investors are all examples of the state of insecurity threatening foreign investment in Nigeria. The endless insecurity in Nigeria which range from ethnic conflicts to religious clashes, restiveness in the oil producing communities, the emergence of ethnic militia, intra-ethnic and/or communal disturbances, escalating crime wave will no doubt over-shadow whatever incentives that the Nigerian government may provide to attract foreign investment. No foreign investor will consciously invest in an environment where there are heightened insecurity and where



the protection of his investment cannot be guaranteed. The government both at the federal and state levels have to join forces in mitigating the hardship caused by national insecurity by addressing the problems of some of these militant groups/terrorist-groups through dialogue and peaceful meetings. One of the major reasons given for Nigeria's failure to attract the much desired foreign investment despite the efforts made by the successive Nigerian Government is the inadequacy of the basic infrastructures in Nigeria. The basic infrastructures which have been and are still being lacked in Nigeria include: electricity, water, roads, telecommunication services, oil and gas supply, transportation and a host of others. In Nigeria, these tools are referred to as the public benefits which the government is under the obligation to confer. The near absence of these basic tools makes cost of production in all spheres of life very high. This no doubt slows the pace of economic development and serves as a hindrance to the inflow of foreign investment into the country.

Commentators on the state of infrastructure in Nigeria are unanimous that the high operational and production cost is a subject of major concern to many desiring foreign investors. A major concern of foreign investors with Nigeria is the burden of high operating cost which impact adversely on domestic supply. It makes investment highly unprofitable relative to the rest of the world. Deteriorating infrastructural support services have contributed enormously to the escalating production cost which undermines Nigeria's global competitiveness for capital. Over 80 percent of firms operating in Nigeria generate electricity privately, dig their own boreholes for water and buy poles for telephone wires to factory sites (Obitayo, 2006). The same concerns were echoed by the House of Representatives Committee on Works and lamented that in spite of the N1.414 trillion appropriated for the road sector since 1999, the roads have remained more dilapidated than they were before 1999 (Oweni, 2012). It is rather unfortunate that the above statements still represent the infrastructural situation in Nigeria up-to-date. Furthermore, (Obadan, 2006) also considers inadequate infrastructure a major obstacle to the influx of foreign investments into Nigeria. To him, policy must continue to focus on adequate provision and rehabilitation of infrastructure: fuel supply, water supply, transportation, telecommunications, etc. as a critical element of an enabling environment for private sector held growth.

The conclusion that can be drawn from the foregoing commentaries is that basic infrastructure is very important for the survival of any business. This has constituted a major concern to foreign investors whose major aim for seeking to invest in Nigeria is to make profit. The present state of infrastructure in Nigeria is bad and if urgent steps are not taken to address it, it may get worse. And until Nigeria rises up to these challenges foreign investment inflow will continue to elude the country. It is noteworthy that foreign investment is inevitable towards the sustainability of any meaningful socio-economic development in Nigeria. In this regard efforts should be made by the Nigerian government to remove these challenges that impede foreign investors from investing in Nigeria.



4. Conclusion

This study is embarked upon because of the benefits derivable from foreign investment by any Country especially Sub Sahara Africa like Nigeria. It has been argued in the paper that Nigeria is one of the economies with great demand for goods and services and has attracted foreign investment over the years. However, based on the dwindling volume of foreign investment in flows to Nigeria, there is urgent need for the Government to review the present policies and look towards attracting foreign investment. The major conclusion that can be drawn from the study is that Nigeria is yet to fully reap the benefits of foreign investment, as its impact on economic development at the moment is very little. However, hopes are rift that if round pegs are put in round holes, the anticipated benefits of foreign investment will begin to manifest in Nigeria. It is therefore recommended that the level of security at all levels in the Country should be overhauled in order to boost indigenous private and foreign investors' confidence as instability in any nation scare away prospective investors. Infrastructure in the country should also be improved on the Government.

Furthermore, the foreign sector in Nigeria should be liberalized, all barriers to trade that are inimical to Cross-border trade such as arbitrary tariffs; import and export duties and other levies should be reduced to the barest minimum or, if possible removed. There should be clear guideline in government policy regarding priority sectors that require foreign investments in Nigeria among which sectors like agriculture, mining and manufacturing should be uppermost for development. The spill-over effects of the development of these sectors would be manifold increase in rate of employment, GDP and output, food supply and raw materials for industries (especially local ones) and foreign exchange earning etc. To attract more foreign investments, the government must check the rising insecurity. There is no doubt that Nigeria's suffocating business environment is a major factor in the drop in foreign investments. Indeed, the present business environment is most unfriendly. The ease of doing business is still scary despite a slight improvement recorded last year. Worsening insecurity remains a big concern to potential investors. With mounting infrastructure deficit, high cost of production occasioned by epileptic power supply, multiple taxations from different government agencies Nigeria cannot attract the needed foreign investments. For instance, at about 32.5 per cent, Company income tax in Nigeria is considered among the highest in the world. In most counties, it is between 15 and 16 per cent. This is in addition to our inefficient port and rail infrastructure. All of these are disincentives to investment. It is, therefore, not surprising that most investors are moving to other countries where taxes are reasonably low, and where the government is interested in creating jobs rather than imposing high taxes. The economy needs investments to stimulate growth and generate revenues. But, any shrewd investor must enquire about the safety of his investment before doing so. Available statistics revealed that every geopolitical zone has witnessed a massive drop in investment. For instance, a recent report on FDI in the country estimated at \$93.3billion between 2013 and the first quarter of 2020 showed that the South East region received the least amount of \$203.898 million. Comparative figures



from the NBS report indicate that South East only outperformed North East and North West from 2013-2020, with capital importation of \$39.4billion (0.04 per cent) and \$29.9billion (0.03 per cent), respectively. The South West received the largest, \$81.8billion, representing 87.70 per cent of the total FDI, South South \$470.6 million (0.50 per cent), and North Central, \$10.7billion (11.51 per cent). Above all, there is need for reforms at all levels of government to strengthen investors' interest in the country.

Finally, there is an urgent need to review the investment legal regime so as to remove all such overlapping, inconsistent and unfavourable laws that militate against influx of foreign investments into Nigeria. In carrying out this task, an insight must be made to the strategies employed by other regimes in such jurisdictions that have succeeded in attracting foreign investment.

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Social Media Prevalence and Usage for Academic Purpose among Student of Delta State University

Mary OmoyeIsah
(omoyemary1994@gmail.com)

¹ **Lucky Ogheneruemu Ojoboh**
(ojobohlucky@gmail.com)

¹*Department of Mass Communication, Faculty of the Social Sciences, Delta State University, Abraka.*

Abstract

The study examines social media prevalence and usage for academic purposes among post graduate students of the Delta State University, Abraka. The population of study was the over 6000 registered PG students in the 2020/2021 academic session. Two hundred respondents were purposively selected as the sample size. These respondents were surveyed using a structured questionnaire. Uses and gratifications theory was the anchor of the study. The study found that the postgraduate students of the Delta State University, Abraka used social media for academic purposes as well as personal reasons. The study discovered that postgraduate students of DELSU Abraka were able to benefit from the use of social media platforms as they relate with their contemporaries, faculty members and staff of the PG School. Recommendations include the need to enhance the use of social media platforms in the University by increasing access and making the ICT unit of the University more functional and accessible via wifi.

Keywords: Social media, Academic purposes, Gratifications, SNSs

1. Introduction

Social media is the application that allows users to converse and interact with one another. It is an online space that is used by people to connect, share, communicate, establish or maintain connection with others for various purposes. Social media is an online platform which enables people to build social networks or relations with other people who share similar personal or career interests, activities, backgrounds or real-life connections. Social media is therefore the interaction among bodies in which they create and share information and ideas in networks.

However, social media relies on many electronic devices like tablets, i-pads, laptops, and Internet-based technologies for connecting people. Thus, social media can be described as technologies that facilitate social interaction, make collaboration possible, and enable deliberation among people at the global level, (Boateng & Amankwaa, 2016). According to Ali, Iqbal & Iqbal (2016), social media is the collection of applications such as Facebook, Twitter, WhatsApp, LinkedIn and YouTube, among others, that link people together as they share information through social networking. Social media usage has become a way of life among students in particular and youngsters in general. Social media and platforms, including social networking sites can be very useful as educational tools to complement



their curriculum. This is in tandem with Agwi & Ogwueleka (2018) who opine that the use of social media have exploded and evolved into online platforms where people create content, share it, book mark it and network at a prodigious rate. Ogwueleka adds that the prominent users of social media are students. Mowafy (2018) corroborates this by stating that social media usage is one of the most trending among...adolescents and young adults nowadays. Students are now' prosumers- they produce and consume content on social media platforms. Aggressive use and adoption of social media by students at various levels could be attributed to their up to date knowledge of and comfort within the latest technology and convenient accessibility to these social media tools (Vorderer, 2016). The reason for this attraction and appeal of the social media includes the use of social media by university administrators, students' affairs units of universities and faculty members who use social media platforms as means of communication with the students (Junco, 2012). Human communication, through the use of the social media platforms has become a way of life among students as well as adults.

Social media is increasingly becoming popular among Nigerian students. As such it is generating concerns among researchers, school authorities and parents. The various purposes for which student use social media have ignited inquiries in academic cycle. It is believed in some quarters that the academic performance of students are facing a lot of neglect and challenges. There is a deviation, distraction and divided attention between social media activities and their academic work. Junco, Merson and Salter (2011) however submitted that excessive use of social media tools by students has led to debate over whether or not it has changed the very shape and structure of student's social behaviour and academic practices this has thus become a source of worry to many leading educators who believe in knowledge and skill acquisition.

Kutu & Kutu (2022) investigated the use of social media for academic purposes by the postgraduate students of University of Kwazulu Nathan and the problems associated with their use as well as the uncertainties related to their use in the South African context. The cultural background is different and the learning environment is more conducive. Studies on the impacts social media have on the academic performance of postgraduate students in Nigerian universities are yet to be given adequate attention in the literature. A recent study by Aghaunor and Ekuobase (2015) focused on ICT tools rather than any specific social media platform. Ezeah, Asogwa and Edogor (2013) could not determine whether a significant difference exists in "social media" habit between male and female students. This study intends to ascertain the pattern of social media usage of postgraduate students; to find out the impact of social media on the academic performance of postgraduate students; and to find out the social media app used mostly by postgraduate students.

2. Literature Review

Conceptualization

Social media is a new phenomenon that have generated a lot of interests from various fields and disciplines. And social media research has been developing at a rapid pace. Different



scholars have described social media according to the 'colour of the lens of their microscope'. In the opinion of Dewing (2012) "social media refer to the wide range of Internet-based and mobile services that allow users to participate in online exchange, contribute user-created content or joining online communities." According to Ezeah, Asogwa and Edogor (2013) "social media are modern interactive communication channels through which people connect to one another, share ideas.

Technological advancements have brought major changes to the ways and manners people conduct their affairs globally. This technological advancement continues to break communication barriers and replacing them with new methods of connecting global audience. With the enablement of technology, anyone who has access to the Internet can be connected through numerous accessible social media platforms, and mobile telephone and be able to communicate via video calls and electronic conferencing with peers regardless of distance. Sajithra & Patil (2013) express the belief that "social media is an extension and explosion of traditional word of mouth networks. Word of mouth has always been the most effective and trust worthy means of disseminating information".

Social media have become very popular in recent years, this may be attributed to increasing proliferation and affordability of Internet enabled devices such as personal computers, mobile devices and tablets. This is evidenced by the burgeoning popularity of many online social media that include such social networking platforms as Facebook, collaborative projects such as Wikipedia, content communities like YouTube, blogs like Word Press, virtual games worlds such as World of War craft and virtual social worlds like Second Life. According to statistics by National Bureau of Statistics [NBS] (2016) as at September 2015, there were a total of 150,469,438 mobile subscribers in Nigeria. Of all users, a total of 97,212,364 had Internet subscription. As a result social media are becoming more and more popular especially among students in Nigeria.

Considering that social media are in different categories, Kaplan and Haenlein (2010) tried to classify social media into six distinct categories:

Collaborative Projects - In the most general sense, collaborative projects are a special form of social media application that enable the joint and simultaneous creation of knowledge related content by many end-users. Whereas blog content is authored by a single person or a few editors and may later be commented on by others, collaborative projects are different in that they allow all users to equally post, add, or change content. In this sense they are probably the most democratic form of social media. Collaborative projects allow community of people to add and edit content in a community-based data base. There are different types of collaborative projects and they include:

Wikis- Wiki means "quick" in the Hawaiian language and its originator, Microsoft Encarta described a wiki as a type of server software that enables users to create or alter content on a Web page. Wikis are interlinked web pages based on the hypertext system of storing and modifying information. Each page can store information and is easily viewed, edited, and



commented on by other people using a web browser. Functionally, a wiki is meant to engage individuals to regularly update wiki pages in a collaborative fashion, to add new information, and to create links between pages. There can be benefits to student engagement when a wiki is employed as part of a blended learning approach (Neumann & Hood, 2011). One well known example of wiki is Wikipedia, a free online encyclopaedia that makes use of wiki technology. A wiki enables readers to create and edit encyclopaedia articles. The second type of collaborative project is social bookmarking sites, or collaborative tagging services. They allow users to organize and share links to websites; interact by tagging website and searching through website bookmarked by others that can subsequently be organized in the form of tag clouds: visual representations of tags, the importance of each indicated by its font size or colour. The resulting classification of content is sometimes referred to as folksonomy, a portmanteau of folk and taxonomy. The most widely known representative of this type of collaborative project include Reddit, Stumble Upon, Digg and Delicious. Delicious was founded in 2003 and today has more than 5 million users and 1 billion linked bookmarks (Kaplan & Haenlein, 2014).

Online Forums/Message Boards - The third type of collaborative project is online forums or message boards, via which people can hold conversations in the form of posted messages. As opposed to wikis, forums usually do not allow users to edit content posted by others, but rather only respond to or discuss this content within their own postings. The right of editing is limited to forum administrators or moderators. Also, forums only count as collaborative projects when their focus is on the joint creation of knowledge (Kaplan & Haenlein, 2014).

Review Sites - Review sites are websites that focus on exchanging feedback regarding anything of relevance in human life. Here interaction is by voting for articles and commenting on them. Prime examples in this category include Propello, Trip Advisor and Epinions.com. Review sites usually employ some form of reputation system that allows them to compute reliability scores based on ratings received within user reviews. These systems are designed to avoid strategic manipulation of the content posted (Kaplan & Haenlein, 2014).

Blogs - Blogs are Web information sharing technology (Boulos, Maramba, & Wheeler, 2011). According to Kaplan and Haenlein (2011), blogs are the social media equivalent of personal web pages and can come in a multitude of different variations, from personal diaries describing the author's life to summaries of all relevant information in one specific content area. Popular blogs include Word press, Blogger, Movable, Live Journal, and Xanga. Although blogs did not originate in education sectors, they have become useful in various educational levels and settings, and as an authoring tool. According to Kist (2013) Blogs offer students the chance to keep multimedia records, incorporating video and sound files, as well as images into their written record. The ability for students to comment on each other's blogs allows classroom discussions to continue around the clock. Åkerlund (2011) remarked that the assignment to the students in traditional teaching is often based on



production of written texts that are submitted to the teacher and/or presented to the class. With blogging from and the use of cameras inside or outside the classroom, the mission can be to tell a factual story in words and pictures. Thus engaging in dialogues in the form of blog comments are associated with positive attitudes towards online peer interaction and academic achievements, as well as positive motivation to learn from peers (Yang & Chang, 2011).

Content Communities - Content communities according Dewing (2012) allow users to share photos or videos and commenting on other users' submission. They allow users to organize, share and comment on different types of contents such as images, videos. Content communities exist for a wide range of different media types, including text (e.g., BookCrossing), photos (e.g., Flickr), videos (e.g., YouTube), and PowerPoint presentations (e.g., Slideshare). YouTube footages enable direct access to a vast array of performance techniques, interpretative decisions and visual cues that can be replayed and reviewed at will, thus affording a learning tool of great potential thus it may be used as a tool.

Social Networking Sites - This category of social media allow users to connect by creating personal information profiles, inviting friends and colleagues to have access to those profiles, and sending messages between each other. According to Statista 1.4 billion people used social networking sites around the globe in 2012; by 2016, this number will grow to an estimated 2.13 billion. While Facebook remains the dominant platform with just over 1.5 billion registered users many other platforms and apps have considerable audiences. Created in 2004, Facebook according to NOIPolls (2016) is the most popular SNS in Nigeria. To join Facebook, a user had to have a harvard.edu email address. Beginning in September 2005, Facebook expanded to include high school students, professionals inside corporate networks, and, eventually, everyone.

Virtual Game Worlds - The virtual game worlds have the features of choices, the framing of the game world through a set of rules of how to interact with it, and the possibility of interacting with the game environment. In virtual game worlds users are usually required to follow strict rules that govern their behaviour (Kaplan & Haenlein, 2011).

Social Media Usage among Students - Research on the reason student embrace social media is still limited. Nevertheless the purpose for which social media are deployed appear to be expanding. A handful of studies addressed some specific category of social media rather than the generality of social media. In investigating the purpose students of the university of Nigeria Nsukka use social media site. Eke, Omekwu and Odoh (2014) surveyed 150 students and found that student use SNS to communicate with friends, watch movies ,discuss national issue like politics , economy and religious matter and for academic purposes which is particularly relevant to their academic pursuit . Citing the National School Board Association. Klopfer, Osterwell, Groff and Hass (2011) reported that the topic of most conversation on SNS is education. 60 percent of the student Surveyed said that they use the site to talk about education topic and more than 50 percent use it to talk about specific school work. In a similar study to ascertain how university students



from a range of European countries (Lithuania, Romania, Ukraine, Czech republic , Turkey) use social networking website Lamanauskas, Sleklene and Ragullene (2013) found that most important function of social media use by respondent from all countries they surveyed were communicating , learning and exchanging information . Another study by Unal and Koroglu (2013) found that prospective teachers (students) use social media for social interaction, communication, identification, recognition and education. Similar study by Mehmood and Taswir (2013) found that of the 80 percent students who reported that they use a social networking site on phone and that the smart features available on social networking like reading , Rss feeds, location , tagging and status updates were popular uses of social network on mobile phone. These were not directly related to their educational pursuit.. Other studies have delimit their attention to some popular platform of the major categories of social media.

Their findings show that students use it to keep in touch with their friends to let others know what is happening in their lives, communicate with friends in classroom, sharing of news and other issue and these do not relate to their academic goal. Similarly Ezeah, Asogwa and Edogor (2013) sampled 300 students from selected universities in South East Nigeria and found that students in South East Nigeria use the social media partly because of the pleasure and fun they derive from watching movies. In another survey of 93 student of the University of Benin, Agbanor and Ekuobase found that 75% of activities carried out with the aid of ICT tools do not have any direct link to students curricular. Implying that students use social media in pursuing activities that do not have bearing with their academic. Evidence emanating from a polytechnic setting provided by an insight from a study by Buari and Ashara (2014) who surveyed 932 students of Kaduna Polytechnic Nigeria found that students use social media to connect, interact ,share information and chat with friends constituting activities that are meaning less to their academic goal.

Empirical Studies

Teenagers and young adults have especially embraced these tools as a way to connect with their peers, share information, reinvent their personalities, and showcase their social lives (Boyd, 2007). As a result, a lot of students happily make use of these opportunities by spending a substantial amount of their time to use various social media platforms. However, the question remains that whether social media have any impact on student's academic performance. Daluba and Maxwell (2013) posit that “millions of people are using social media tools as part of their everyday lives for work, studies and play because of its ubiquity”.

The purpose students use media and the implication the activity has on academic performance has recently become the fore of academic discuss. Similarly, Aghaunor and Ekuobase (2015) remarked that “[social media] seem to have a profound impact on the process of learning in higher education by offering new possibilities for learners and teachers. However, with the recent proliferation of ICT tools and services, students are finding it difficult to curtail its negative appeal”. Others worry that the social media



phenomenon in Nigeria is making students spend less study time on their books which resulted in dwindled academic performance.

According to Tech City (Ijaz 2015), in 2015, 93 million Nigerians surfed the Internet through their phones out of which 44 percent used it on social networking sites. In a survey by NOI Polls (2016) the study shows that almost two-third (63 percent) of Nigerians among the respondents stated that they are on one form of social media or the other. Analysis of age-group revealed that 74 percent were aged between 18–25 years, a typical undergraduate ages. The survey also revealed that due to the unique features of various social media platforms, most Nigerians use more than one, depending on preferences. Similarly, a survey by QZ (Larson, 2015) found that 91 percent of respondents mentioned Facebook as the most used social media platform in Nigeria. And that Nigeria has about 7.2 million daily active users with 97 percent of them accessing the platform via mobile to “like”, “share” and “upload” content on the social network. This is followed by WhatsApp (73 percent), BlackBerry Messenger (BBM) (20 percent) and Twitter (17 percent) among other social media platforms. A number of prior studies that have examined this issue have come up with mixed results. Some studies like Hasnain, Nasreen and Ijaz (2015); Owusu-Acheaw and Larson (2015) pointed to a negative relationship. Whereas, other studies like Othman Haseena and Rasith (2016) pointed to a positive relationship. Yet, some couldn't establish any direction.

Similarly, Buhari, Ahmad and Ashara (2014) in “Use of Social Media among Students of Nigerian Polytechnic” also conspicuously omitted the same factor. And no attempt was made to establish a significant difference that exists in “social media” habit as it relates to age. Thus, the need to make up for these gaps in knowledge in area of education in Nigeria makes the current study very significant. Its findings would further reveal the purposes students use social media, and whether usage of social media affect academic performance or not, the interaction of gender difference, and the interaction of age. Hence, the main objective of this study is to investigate whether there is a positive impact of the social media use on academic performance of undergraduate students in the University of Benin.

Social Media Use for Academic Purposes

Students' academic life have moved to a different dimension since the introduction of social media networks and several studies have affirmed that social media plays an important role for students in higher education including the study conducted by Wheeler , Yeoman's and Wheeler (2008). In their study, they recognized four major advantages of social media usage by students in higher education which includes enhancing relationship, improving learning, motivation, offering personalized course material and developing collaborative abilities. Indeed social media has contributed greatly to facilitating learning in the 21st century. It is shown that a greater percentage of students including those at the postgraduate level commonly used social media to improve their studies for instance ,the study conducted by Jain, Verma, Verma and Tiwari (2012) titled the impact of social networking in promoting education found that students benefit from chatting with other



students and external sources to acquire knowledge . Also Yunus and Salehi (2012) argued in the same direction that students gain more vocabulary, improve their writing skills and reduce their spelling mistake through social media usage.

In fact as an educational tool, social media enriches learning by giving both students and teachers the opportunity to connect in new and very exciting way thereby encouraging flexible mode of learning .it is stated that flexible learning expands the choice on what ,when and how people learn.it support different style of learning including eLearning which is highly patronized across the globe (Pappas, 2013) O'Keefe and Clake Pearson (2011) ,in their study found that social media benefits students by connecting them to one another on assignment and projects. It is furthered buttress in the study of Arquens and Esteban (2013) whose conclusion was that social media undoubtedly generates new opportunities to engage students in higher education as they become remarkably effective at connecting people and facilitating the exchange of information it is a clear and indisputable from these studies that social media usage in the educational sector cannot be underestimated.

Theoretical Framework

Uses and Gratification Theory - The uses and gratification theory was developed in 1974 by Katz, Blumler and Gurevitch. Basically the theory places more emphasis on what people do with the media rather than what the media do to people (Katz 1959). Uses and Gratification is the study of the gratification or benefit that attract hold audience to various type of media and the types of content that satisfy their social and psychological needs. It was adopted in this study because it shows how students make use of social media to satisfy their academic needs. Social media as a new communication tool also lend itself to use and gratification approach

3. Methodology

The study covers students of Delta State University. Rather than treading on the same path done by some researchers who had conducted similar studies in the past. The Students selected for the study are limited to only Postgraduates students that are running their Second and third degree programs. The study focus on social media prevalence and usage among students. This study is significant because a clearer understanding of the usage of social media enhances digital literacy such as network literacy, media literacy, computer literacy which will certainly increase academic performance of postgraduate students of DELSU. The proper use of social media that will accrue from a clearer understanding of the process of usage or steps will aid collaborative learning and communication amongst postgraduate students of DELSU. The findings of this study will contribute to the existing body of knowledge on digital literacy and knowledge distribution and acquisition. The outcome of this study will engender and foster communication and life-long learning and enhance access to e-learning resources and e-libraries as envisaged by the DELSU PG School. The lecturers of PG programme courses will also benefit from the findings of this study because the more, the merrier especially about the immense possibilities of the social



media and its numerous platforms. The study will certainly benefit both lecturers and the postgraduate students since more facts and insights will be available from the study which will engender rapid interactions between postgraduate students, the ICT library of DELSU and other universities' libraries.

A survey research design was used for the study. This design enables the researcher to generate data through the standardized collection procedures based on highly structured research instrument and well defined study concepts and related variables. The population for this study therefore comprised all postgraduate students of the Faculty of the Social Sciences of Delta State University enrolled for the 2020/2021 academic session. Sample is a subset of the population selected in place of studying entire population. The population for the study is 6000 and the sample size is 200. Purposive sampling technique was used to select respondents that are most likely to yield appropriate and useful information to achieve the objectives of the study (Kelly, 2010). This agrees with Senam & Akpan (2018) who aver that purposive is a non-probability sampling in which the investigator uses to predetermine criteria as the rational for selecting the actual sample for examination. The respondents are selected from the population of study based on their ability to meet certain specified characteristics or quality. The respondents were selected because they were postgraduate students of the DELSU PG School. It is immaterial whether or not the selection is an accurate representation of the population of study. In carrying out this research, a well-constructed and self-developed questionnaire was used to get the desired information from the students. The questionnaire was divided into two sections (A and B). Section A was for collection of information on personal data of respondents while Section B consisted of questions that elicited responses from the respondent about the objectives of the study. To ensure that the questionnaire is free from error, the questionnaire used for this study was thoroughly scrutinized by the colleagues in the Faculty of the Social Sciences, DELSU, Abraka for clarity, precision and comprehension. Data was collected using the questionnaire which the researchers administered on a face to face basis to the respondents. The questions were close ended questions and it was self-administered to the respondents. Quantitative method of analysis was employed in analyzing data. Frequency tables and explanation building were used.

4. Results

This section is primarily to give a presentation and analysis of data collected from the field through the use of research instrument which is the questionnaire. A hundred copy of the questionnaire was administered. Ninety eight was retrieved and found usable. There is a return rate of 98%.therefore, the 196 copies retrieved were analyzed for the study.



Table 1: Social Media Usage

Respondents	No. of Respondents	Percentage
Gender		
<i>Male</i>	80	41%
<i>Female</i>	116	59%
Age Bracket		
<i>21-26 years</i>	40	20%
<i>27-32 years</i>	60	31%
<i>33-38years</i>	50	26%
<i>39-44years</i>	46	23%
Access to Social Media		
<i>Yes</i>	180	92%
<i>No</i>	16	8%
Hours Spent on Social Media		
<i>1-3 Hours</i>	30	15%
<i>4-6 Hours</i>	40	20%
<i>7-9 Hours</i>	60	31%
<i>10 hrs. & above</i>	66	34%
Use of Social Media for Academic Purposes		
<i>Yes</i>	180	92%
<i>No</i>	16	8%
Use of Social Media for Exchange of Academic Materials		
<i>Yes</i>	160	82%
<i>No</i>	36	18%
Most Used Social Media Platforms		
<i>Google</i>	80	41%
<i>Facebook</i>	40	20%
<i>WhatsApp</i>	76	39%
Frequency of Social Media Use		
<i>Yes</i>	180	92%
<i>No</i>	16	8%
Total	196	100

Source: Field Work

The result in the Table shows the gender distribution of the respondents 80 were males, while 116 were females. The age shows that 40 respondents were between the age brackets of 21-26 years, while 60 respondents fell between the age brackets of 27-32 years. 50 respondents fell between the age brackets of 33-38 years. 46 respondents fell between the



age brackets of 39- 44 years. Out of 196, 180 respondents had access to social media while 16 respondents did not have access to social media. From the Table, 30 respondents spent 1-3 hours on social media, 40 respondents spent 4-6 hours, 60 respondents spent 7-9 hours on social media, 66 respondents spent 10 hours and above on social media. Similarly, 180 respondents made use of social media for academic purposes while 16 respondents did not make use of social media for academic purposes. In terms of using social media for academic purpose, the result shows that 160 respondents made use of social media for exchange of academic materials while 36 respondents did not make use of social media for exchange of academic materials. For used social media, 80 respondents made use of Google, 40 respondents made use of Facebook, 76 respondents made use of WhatsApp. The frequency of social media used shows that 180 respondents made use of social media frequently while 16 respondents did not make use of social media frequently.

The discussion of findings of this study is premised on providing answers to the research questions yielded by the objectives of the study. Data analysed show that the pattern of social media usage by the postgraduate students of DELSU was more for academic purposes and exchange of academic materials. There were more postgraduate students (respondents) who spent up to ten hours on social media platforms. This agrees with Tapscott (1998) who had asserted that adolescents' life is characterized by media privatization in a multi-media environment. Put differently, it will be difficult to find a postgraduate student who does not use social media. This is observable in Tables 4, 5 and 6. In Table 4, 66 respondents spent ten hours and above on social media platforms. Table 5 shows that 180 respondents used social media for academic purposes and Table 6 confirms that 160 respondents used social media for the exchange of academic materials. This is a confirmation of Madge, Meek & Hooley's (2009) finding: that the use of social media enhances educational process and interaction. The second objective is to find the impact of social media on the academic performance of the postgraduate students of DELSU. Data analysed in Tables 3, 4, 5, 6, 7, and 8 point to the fact that social media impacted the academic performance of the postgraduate students of DELSU. Respondents had access to social media. Respondents spent hours on social media; they frequently use social media and they used social media for academic purposes. The postgraduate students of DELSU also used social media for the exchange of academic materials. Of note is the fact that the respondents' most used App was the GOOGLE, a search engine for the sourcing (browsing) of academic materials. This is in Table 7 where 80 respondents returned that Google was their most used App. This was closely followed by those who chose WhatsApp. It can be deduced that social media did impact the academic performance of the postgraduate students of DELSU. This is a proof of Hoyle (1986) who had argued that schools are established with the aim of imparting knowledge and skills to those who go through them and behind all this is the idea of enhancing good academic performance. These findings remind one of Mezirow (1991) who had stated that our actions towards things (use of social media) are base on the meanings the things have for us. The third objective of the study is to find out the most used social media APP by the postgraduate



students of the DELSU. The most used APP by the postgraduate students of DELSU was the GOOGLE. This implies that they searched for academic materials, read them, exchanged them with their contemporaries and thus were gratified by the use of social media. This affirms the theoretical anchor of the study, the uses and gratification theory. The uses and gratification theory is in tandem with the main process of analysing human motivation. This corroborates Watson and Hill (2003) who aver that the uses and gratification theory 'explores life to gain information, to keep an eye on the world and to clarify what we think about it'. The study has proven that there is a positive relationship between social media and the level of gratification derived from its use.

Judging from the discussion above, analysis, the respondents used for this study were postgraduate students and it shows that majority of students made use of social media for academic purposes Two hundred questionnaires were administered to the respondents and 196 were retrieved. The male respondents were (40%) while (68%) of the respondents were females. The highest age bracket was between the ages of 27-32years while the lowest was 21-26 years which constituted (20%). The results of the findings show that postgraduate students had access to social media and they made use of these social media platforms for academic purposes. It also show that the respondents spent more time on social media. The respondents also agreed that they made use of social media for exchange of academic materials. The study shows that the number of students who made use of social media for academic purposes is very high.

The findings showed that majority of the postgraduate students of the Delta state University, Abraka had access to social media and made use of social media for academic purposes. Social media platforms were also used for exchange of academic materials.

5. Conclusion and Recommendations

This study concludes that postgraduate students made use of social media platforms for academic purposes. They also made use of social media to improve their academic performances. The most used social media App was Google, a search engine for the browsing of academic materials and course related content. Without the fear of contradiction, the study has shown that the postgraduate students of DELSU were positively impacted by their use of social media to further their academics.

Based on the findings and conclusion of the study, the following recommendations were made. Social media networking sites should be expanded to enhance the postgraduate students' academic performance. Social media platforms should be used for lectures in school to facilitate learning. The University should make access to the Internet easier for the use of students to enhance academic use. The DELSU PG School should have its own website for postgraduate students to use. The DELSU PG School should expeditiously establish its own ICT library such that its postgraduate students can access relevant academic literature from other renowned university libraries. The DELSU PG School should have enough photocopiers for the use of postgraduate students. The DELSU PG School should establish an ICT unit for use by its postgraduate students.



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Global Economic Uncertainty and Monetary Policy Intervention: A Case Study of Sub-Saharan African Countries

¹**Abdurrauf Babalola**
(abdclemeat@yahoo.com)

¹**Tunde Salau**
(tundesalau001@gmail.com)

²**Josy Ikhayere Ijie**
(ljiekhayere65@yahoo.com)

¹Department of Economics, Al-Hikmah University, Ilorin, Nigeria.

²National Drugs Law Enforcement Agency, Federal Ministry of Justice, Nigeria

Abstract

This study examined the impact of conventional and unconventional monetary policy intervention on economic uncertainty in Sub-Saharan African countries, between 1980 and 2019. Panel Autoregressive Distributed Lag model was employed with a cross-sectional analysis. Findings of the study revealed that, in the short-run using the general panel result, unconventional monetary policy has significant interventional capacity to resuscitate economic uncertainty and restore steady state, while the conventional monetary policy (interest rate) could not have any significant impact. However, in the long-run period, both policies did not indicate any significant impact. Individually, cross-sectional coefficients showed clearly that, in the short-run, both conventional and unconventional monetary policies improved economic uncertainty. The individual speed of adjustment indicated a significant correction of the uncertainty back to a steady state, though at different levels and speeds which could depend on different local factors. The study, therefore, recommends that, countries could further reduce their official interest rate as it is quite high compared to other developed nations. Also, though, conventional monetary policy is still effective in the short-run, based on individual countries, the unconventional monetary policy should be given priority in improving economic uncertainty and making nations return to a steady state.

Keywords: Conventional policy, Economic uncertainty, Global uncertainty, Monetary policy intervention, Unconventional policy.

1. Introduction

As economic uncertainty is wearisome and in fact prevalent all over the world and thus a global economic phenomenon, the choice of instrument is very important. While some countries use money supply to regulate their economy, some bang on interest rate, depending on the development of the financial sector or what is sometimes called policy environment. Some other issues that would affect the choice of monetary policy could be external such as security issues, health and natural disaster. Tools for carrying out



monetary policy are basically two in broad terms: Conventional and unconventional policy instruments. Conventional policy instruments are the tools that are predominantly and habitually used to control the money stock in an economy. Such policy instruments, in Nigeria, include the monetary policy rate, cash reserve ration and liquidity ratio. The unconventional policy instruments are occasionally used when the conventional policy instruments are not sufficient to achieve the objectives of the central bank. They include, among others, negative interest rate, asset purchase programmes and quantitative easing. Traditionally, the conventional monetary policy is used to regulate and bring back the economy to a steady state. However, when the conventional policy could not influence the economy in a speed required or within a specific period, the unconventional monetary policy is put in place to corroborate the conventional policy and thus, taking the economy to achieve macroeconomic targets.

In SSA, countries like Cape Verde and Comoros put their short term interest rate to 0.25 and 0.93 which are quite close to a zero interest rate with an aim to boost their economy. The United State of America, through its central bank (Federal Reserve Bank), used interest rate as policy instrument to achieve macroeconomic target. This was done by reducing the short term interest rate to near zero (similar to the Islamic zero-interest rate), for more than ten years (Rudebusch, 2018). Due to the irresponsiveness of the economy to this move, the Federal Reserve was pushed to employ some unconventional monetary policy instruments such as quantitative easing and forward guidance. These policy outfits really assisted in restoring economic recovery and also brought back the high inflation rate to its target (Rudebusch, 2018). In a similar vein, the indirect monetary measures were employed by the South African Reserve Bank (SARB) to redirect the economy and salvage it from a runaway inflation and outrageous unemployment rate, during which conventional policy instruments were almost become increasingly inefficient over time. Thus, the need for complementary monetary policy, which is the unconventional monetary policy (Van Wyngaard & De Jongh, 2019).

Monetary policy is mostly and often used and goes in line with what is called quantitative, general or indirect instruments of monetary policy (Jhingan, 2014). It is modifying of short term interest rate to realize macroeconomic goal (Rudebusch, 2018). In most countries, central banks set the official policy rate, which is called: Monetary Policy Rate (MPR) in Nigeria; Federal Fund Rate (FFR) in the U.S.A.; Repo Rate (RR) in South Africa and Mauritius; Policy Interest Rate (PIR) in Ethiopia, to mention but few. Conventional monetary policy is when the central bank modifies a short term interest rate to realize a predetermined macroeconomic goals, such as reduction of inflation and unemployment rates, improved economic growth, favourable balance of payment, among others. Nevertheless, during the global financial crisis between 2007 and 2009, central banks everywhere pushed their official interest rates to near zero. At such terrible economic situation, economic activities may defy the actual efficacy of conventional monetary policy. Also, regrettably, due to the deepness of the economic slump, policy thrust of near-zero interest rates could not be enough to salvage and resuscitate the economy adequately



and sufficiently, through investment, employment and output. It is at the wake of these inefficiencies that central banks bow to a supplementary policy tools to realize their objectives. Unconventional monetary policy is a tool employed by monetary authority that falls out of line with the traditional measures. They are also called Non-standard monetary policies (Rudebusch, 2018). These include quantitative easing, forward guidance, collateral adjustment, asset purchasing, term funding facilities, among others. Advanced countries such as the U.S.A., Canada and Germany have been using the non-standard monetary policy tools to support short term interest rates. Australia has been using the conventional monetary policy which worked for the economy until the emergence of COVID-19 in year 2020, which made the country to further apply unconventional policy to create more jobs and improve economic activities (Stals, 2021). Nigeria joined the use of unconventional monetary policy during the economic meltdown in 2007 (CBN, 2016). The broad objective is to analyse the impact of monetary policy intervention in stabilizing economic uncertainty in SSA countries. The specific objectives are to examine the effect of conventional monetary policy on economic uncertainty in SSA and to investigate the impact of unconventional monetary policy on economic uncertainty in SSA.

2. Literature Review

Economic literature recognized systematically that monetary policy could modify many actions of both the nominal and real variables such as growth in the gross domestic product and unemployment. Nevertheless, the strength of its efficiency varies across periods, the long-run versus short-run, and across economies. These, of course, could also inform the wide continuum of the arguments among various schools as well as economic experts. Such arguments are still ongoing, and the empirical findings of a lot of researches are still an open inconclusive fact of the actual workings of the policies (Beyene & Singh, 2019). The basic theories on impact of monetary policy on an economy are not farfetched. This has to do with neutrality and non-neutrality of money.

The Classical economic theory believes in money neutrality which says that, money does have a proportionate positive impact on the price level (inflation rate) only. That, it does not have the capability to influence the real sector of the economy, such as interest rate, wealth, investment, employment, and output level. The Keynesian have two situations in which money is neutral. The first is when the economy is experiencing full employment and the second is the special case of liquidity trap. Aside from these two situations, they believe in the non-neutrality of money, that the nominal money stock has the capacity to influence real variables in the economy. This is also the believe of the Post-Keynesians. The Monetarists, led by Friedman, believe that in the short-run, there is money neutrality. However, in the long-run, money is said to be non-neutral (Jhingan, 2014).

On empirical review. There appears to be an agreement that monetary policy committed to inflation targeting which would lead to macroeconomic stability for developed countries. For economies that are evolving and developing, findings are not only limited and uncommon, but are also inconclusive most especially in Mauritius and Seychelles



economies in Sub-Sahara Africa (Madhou et al., 2021). Salihu (2020) examined the impact of monetary policy in pegging price level in Nigeria between 1981 and 2019. The paper employed Granger causality test and cointegration techniques. The co-integration test showed the existence of long-run relationship between the variables. While the empirical findings of the OLS test showed that the conventional monetary policy instruments exert a direct influence on inflation in Nigeria. A study was carried out by Aye (2020) using quarterly time data used to measure monetary policy uncertainty. Incorporating partial method of least squares structural equation model to analysis the effect of fiscal and monetary policies on output in South Africa, findings showed that there is existence of uncertainty within the South African economy which tends to cut back the total output (Aye, 2020). Yusuf (2020) made use of cointegration method to test for the long term relationship between the monetary policies in controlling inflation in Nigeria. The Johansen co- integration test revealed the existence of long-run relationship between the variables. While the empirical results of the OLS test showed that monetary policy rate, M_2 and Treasury rates exert positive influence on inflation in Nigeria. The study therefore concluded that money supply, treasury bills rate, monetary policy rate and rate of exchange had influence on inflation within the period under study.

Since pandemic period that lead to uncertainty and made many economies unstable, Babalola, Adagiri and Ogirima (2020) examined the effectiveness of monetary policy amidst Covid-19 pandemic in Nigeria. Using dataset between December 2019 and October 2020 and employing the Granger Causality and Vector Auto-Regressive tools, they found out that, individually, only monetary policy rate and exchange rate had unidirectional causality while money supply did not have, but when used jointly, all the three variables caused economic growth in Nigeria. Beyene and Singh (2019) examined the role of monetary policy on industrial growths in Ethiopia. The Bound Testing ARDL tool was employed on annual data between 1974 and 2017. The result gave an insight that in the long-run, all variables were found to significantly have impact on industrial value additions except for interest rate. Following coefficient restrictions, the Wald test and Adjusted R-square methods, the VEC short-run parsimonious model revealed that one period lag of commercial output (LINDY(-1)), interest rate and its one period lagged value (LR(-1)) determines the short-run industrial productions of Ethiopia. In South Africa, Van Wyngaard and De Jongh (2019) study made use of quarterly data from 2001 to 2017 and employed ARDL model and Error Correction Model to examined the results of official charge per unit, broad money supply, the rate of exchange, government debt and government income on price level. The study also established that there existed a causal relationship between the variables under study. Adodo et al. (2018) examined the effectiveness of monetary policy and control of inflation in Nigeria. They employed Augmented Dickey – Fuller (ADF), Johansen Co-integration and Error Correction Model (ECM) to gauge the effect of money supply, interest rate and rate of exchange on inflation rate in Nigeria. The results divulged that long run association among the variables existed and that, both money supply and interest rate are statistically significant in explaining



variation in rate of inflation. On the Zambian economy, Haabazoka and Nanchengwa (2016) examined the effectiveness of the monetary policy rate (MPR) on inflation. Using a two-stage regression analysis on data between April 2012 and December 2014, their finding indicated that the MPR (conventional policy tool) did not have significant effect on the inflation rate of the economy. Summarily, some other empirical researches are those of Akarara & Azebi, (2018); Bonga-Bonga, (2017); Berg et al., (2015); Rojid, (2013); Tsangarides, (2010); and Christensen, (2008). None of them has placed their research light on the effect of conventional and unconventional monetary policy on economic uncertainty in SSA countries. This is the gap in literature that this paper intends to fill.

3. Methodology

Data were sourced from World Development Index 2020 for six selected SSA countries and annual dataset was from 1980 to 2019, given about 241 observations. These countries are: Zambia; Morocco; Mauritius; Nigeria; Kenya and Egypt. The choice of countries was based on the availability of adequate data for the variables employed to represent conventional and unconventional monetary policy instrument. The choice of 2019 as the end period was informed by the unavailability of data for 2020 for these variables in the WDI. The technique of analysis was basically the Panel Autoregressive Distributed Lag model which further diagnosed the cross-sectional analysis of individual countries in SSA. Since the dataset were time bound, preliminary checks were carried out which informed the use of ARDL technique.

A parsimonious model specification is adapted from the work of Beyene and Singh (2019) as

$$E_u = f(Conv_{mp}, Unconv_{mp}) \dots\dots\dots 1$$

Where E_u represents economic uncertainty, $Conv_{mp}$ is conventional monetary policy and $Unconv_{mp}$ stands for unconventional monetary policy. The equation 1 was constructed in econometric form to give the equation 2 as below:

$$E_u = \phi_0 + \phi_1 Conv_{mp} + \phi_2 Unconv_{mp} + \eta \dots\dots\dots 2$$

The ϕ s are parameters estimation while η is the error term. Economic uncertainty in the SSA consists of turbulence in unemployment rate, economic growth rate, inflation rate, exchange rate, balance of payment, debt to GDP ratio, among others. For the sake of parsimony, this study used only one major variable to proxy economic uncertainty which is economic growth (E_u). This is because it is the most important macroeconomic objective which signals others. Inferring from the work of Bindseil and Fotia (2021) and Haabazoka and Nanchengwa (2016) in Zambia, conventional monetary policy is proxied by central banks official interest rate ($Conv_{mp}$). The choice of this instrument is informed by its effect on many other short term rates in the money market. More so, it is a single instrument that is mostly used by all central banks in the world. Unconventional monetary policy is proxied by Technical cooperation grants ($Unconv_{mp}$). This variable was used since they



are generally used as policy intervention in most SSA countries and they are measured in same term. It is expected (*a priori* expectation) that when interest rate reduces, investment cost will reduce and becomes cheaper to invest. Investment leads to more employment and increase in aggregate output, which will increase the economic growth of the country. Therefore, conventional monetary policy (interest rate) is expected to have an inverse impact on economic uncertainty. Unconventional monetary policy will have positive and significant impact on economic uncertainty, since as more fund is realized for the intervention, more production will take place and hence, increase growth rate. However, countries with peculiar internal crisis and security issues may not realize this expected results.

Growth rate is the rate of change in the overall output in an economy measured quarterly, by-annually or annually. It is annual percentage growth rate of GDP at market prices based on constant local currency. Aggregates are based on constant 2010 U.S. dollars. GDP is the sum of gross value of goods and services produced by residents of the country over a particular period of time. Interest rate is the cost of obtaining loan. Here, it measures the official interest rate at which central bank lend out money to commercial banks. It affects many other interest rates in an economy. It is sometimes called the central bank rate. Technical cooperation grants include free-standing technical cooperation grants, which are intended to finance the transfer of technical and managerial skills or of technology for the purpose of building up general national capacity without reference to any specific investment projects; and investment-related technical cooperation grants, which are provided to strengthen the capacity to execute specific investment projects.

4. Results

Descriptive Statistics

The descriptive statistics as presented in Table 1 with 241 observations shows that $Unconv_{mp}$ has the highest mean of 1.840, followed by $Conv_{mp}$ and E_u with mean of 16.6073, and 3.8540 respectively. The mean of the distribution is all high because their logarithm is not taken.

The distribution also shows a kurtosis higher than 3 which indicates that the distribution is peaked (Leptokurtic distribution). The Jarque-Bera shows the normality distribution of the data. The probability as reported is the probability that the Jarque-Bera statistic exceeds, in absolute terms, the observe value under the null hypothesis. The probability shows that all variables are not normally distributed as they are all less than 0.05, hence the null hypothesis is rejected. The standard deviation shows the rate of disparity from the mean, the standard deviation follows the same pattern as the mean on the table where $Unconv_{mp}$ has the highest standard deviation followed by $Conv_{mp}$ and E_u with standard deviation of 1.80E+08, 11.43808 and 3.851861 respectively.



Table 1: Descriptive Statistics

	$conv_{mp}$	$Unconv_{mp}$	E_u
Mean	16.6073	1.840	3.8540
Median	15.0000	1.390	4.3300
Maximum	113.3083	9.700	15.3292
Minimum	3.0117	0.0000	-15.4503
Std. Dev.	11.4381	1.800	3.8519
Skewness	3.6278	1.8662	-1.6889
Kurtosis	25.8353	6.6494	9.5730
Jarque-Bera	5764.909	273.6220	548.4110
Probability	0.0000	0.0000	0.0000
Sum	4002.378	4.420	928.8153
Sum Sq. Dev.	31399.13	7.780	3560.840
Observations	241	241	241

Source: Author's Computation, 2022

Skewness is a measure of asymmetry of the distribution of the series around its mean. The positivity of $Unconv_{mp}$ and $Conv_{mp}$ implies that the distribution has a long right tail while E_u is negative indicating a left tail. It is also understandable that the variables are not logged so their volatility are not increased.

Pairwise Correlation Matrix

Correlation analysis is important to ascertain that, the regressors do not have perfect or exact linear representations of one another and to detect multicollinearity issue in the explanatory variables. $Unconv_{mp}$ has a weak positive relationship with E_u while $Conv_{mp}$ on the other hand has a weak negative relationship with E_u . This is shown in the table 2.

Table 2: Correlation Matrix

	$Conv_{mp}$	$Unconv_{mp}$	E_u
$Conv_{mp}$	1	-0.06470	-0.01070
$Unconv_{mp}$	-0.06470	1	0.14127
E_u	-0.01070	0.14127	1

Source: Author's Computation, 2022

The Two explanatory variables ($Conv_{mp}$ and $Unconv_{mp}$) have correlation coefficient of -0.065 indicating a very low relationship and hence, the absence of multicollinearity.

Result of Panel Unit Root

Three tests of unit roots were carried out to actually diagnose the status of the variables and make good choice of technique for analysis.



Table 3: At Level and at 1st difference

Method	E_u		$Conv_{mp}$		$Unconv_{mp}$	
	Stat (at Level)	Stat (at 1 st Diff)	Stat	Stat (at 1 st Diff)	Stat	Stat (at 1 st Diff)
Levin, Lin & Chu t^*	-1.008	-6.595***	0.693	-4.925***	1.398	-1.902**
Im, Pesaran and Shin W-stat	-3.599***	-	-0.226	7.461***	-0.199	-6.281***
ADF - Fisher Chi-square	-2.608***	-	0.096	-7.025***	1.673	-5.788***

Note:*** indicates significance at 1% level, ** Indicates significance at 5% level
 Source: Author's Computation, 2022

The three test statistics used are Levin, Lin & Chu t^* , Im, Pesaran and Shin W-stat and ADF - Fisher Chi-square and the results are presented in Table 3. All the three statistics show that $Conv_{mp}$ and $Unconv_{mp}$ are not stationary at 1% and 5% level of significant as their probabilities are greater than 0.05 at level except GR that is stationary at level using Im, Pesaran and Shin W-stat and ADF - Fisher Chi-square and PP - Fisher Chi-square. At first difference, all three statistics show that E_u , $Unconv_{mp}$ and $Unconv_{mp}$ are stationary at 1% level of significant as their probabilities are less than 0.01. Therefore, E_u is I(0) while the $Conv_{mp}$ and $Unconv_{mp}$ are I(1), which informed the study that Autoregressive Distributed Lag (ARDL) be employed.

Result of the ARDL Model

Table 5 present the panel ARDL results for both long-run and short-run period, with economic uncertainty (E_u) as the dependent variable. In the long-run, $Conv_{mp}$ (interest rate) could not have the correct sign in line with theory. Also the hypothesis test statistics all indicate that both variables do not have significant impact in the long-run, even at 10% level as shown by their probability (0.345 and 0.723) values. This implies that, in the long-run, conventional and unconventional monetary policies do not have any influential capability to adjust economic uncertainty in SSA. This result is not in line with the findings of Salihu (2020), Yusuf (2020) and Beyene and Singh (2019), though they used inflation rate to capture economic uncertainty and their works were only for individual country. Therefore, the reason for this strange result could be because it is based on selected countries in SSA.

Still on Table 4 in the Panel analysis, in the short-run, TCG ($Unconv_{mp}$) it happens to have the correct positive sign and most especially, significant at 5% level. This implies that unconventional monetary policy, as policy intervention, has the capability to resuscitate the economy, in the short-run. The Error Correction Mechanism (ECM) coefficient has the correct negative sign, with about 72.7% speed of adjustment. More so, it is significant at 1% level. However, interest rate ($Conv_{mp}$) could not have any significant impact on economic growth (E_u). The result is quite supported by the study of Adodo *et al.* (2018); Rudebusch (2018); Van Wyngaard and De Jongh (2019); Beyene and Singh (2019).



Table 4: Result of ARDL

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
Long Run Equation				
$Conv_{mp}$	0.041305	0.043635	0.946595	0.3450
$Unconv_{mp}$	-5.89E-10	1.66E-09	-0.355547	0.7226
Short Run Equation				
COINTEQ01	-0.726540	0.206545	-3.517588	0.0005
D($Conv_{mp}$)	0.535032	0.583494	0.916945	0.3603
D($Conv_{mp}$ (-1))	-0.007286	0.056040	-0.130014	0.8967
D($Unconv_{mp}$)	1.05E-09	6.59E-09	0.159418	0.8735
D($Unconv_{mp}$ (-1))	7.19E-09	3.65E-09	1.971295	0.0501
C	2.727743	0.970632	2.810275	0.0054

Source: Author's Computation, 2022

Short-Run Coefficients of Individual Countries

Table 6 showcases the cross-sectional individual short-run coefficients of selected countries in SSA. The Table shows the short-run impact of interest rate ($Conv_{mp}$) and technical corporation grants ($Unconv_{mp}$) on economic growth rate (E_u), including their respective ECM coefficients. In Table 5, it is evident that all six selected countries in SSA have their conventional monetary policy instruments (interest rate) being having the correct inverse effect on economic uncertainty (E_u) and their effects are statistically significant at 5% level.

Table 5: Cross-Sectional Short-Run Coefficients of Individual Countries

VAR	Zambia Coeff	MOROCCO Coeff	MAURITIUS Coeff	NIGERIA Coeff	KENYA Coeff	EGYPT Coeff
COINTEQ01	-0.391***	-1.731***	-0.728***	-0.475***	-0.460***	-0.571***
D($Conv_{mp}$)	0.081***	3.431**	-0.119**	0.222**	-0.165***	-0.2417**
D($Conv_{mp}$ (-1))	-0.17***	-0.118	0.143**	-0.068	0.0084	0.16124
D($Unconv_{mp}$)	5.800***	5.560***	-2.690***	2.280***	-8.94***	-2.170***
D($Unconv_{mp}$ (-1))	7.830***	8.970***	-6.510***	1.260***	1.910***	1.150***
C	0.8652	7.291	2.996	1.180	1.521	2.511

Note:*** indicates significance at 1% level, ** Indicates significance at 5% level

Source: Author's Computation, 2022

Looking at the unconventional monetary policy, the analysis result in Table 6 indicates that there is a direct influence of TCG ($Unconv_{mp}$) on economic growth (E_u), and the impacts, in all countries are statistically significant at 5%. The result further shows that, the ECM coefficients in all countries are correctly signed and all are statistically significant at 1% level. While Morocco has the highest coefficient of about 173.2% as speed of adjustment, Mauritius and Egypt have 72.8% and 57.1% speed, other countries have low adjustment path (39.2% to 47.6%) to equilibrium. This implies that monetary policy generally has high speed in resuscitating the economy during uncertainty of some countries, while some are



low. This could depend on so many reasons such as: policy environment; development of the financial sector; security issues, among others. The result is not different from the studies of Adodo *et al.* (2018); Rudebusch (2018); Van Wyngaard and De Jongh (2019); Beyene and Singh (2019) and Salihu (2020).

5 Conclusion and Recommendations

From the result of analysis of data set of six countries in Sub-Saharan Africa between 1980 and 2019, and using economic growth to proxy economic uncertainty, interest rate to proxy conventional monetary policy and technical cooperation grant to proxy unconventional monetary policy, the study concluded that, in the short-run using the general panel result, unconventional monetary policy has significant interventional capacity to resuscitate economic uncertainty and restore steady state, while the conventional monetary policy (interest rate) could not have significant impact. However, in the long-run period, both policies did not indicate any significant impact. Individually, cross-sectional coefficients showed clearly that, in the short-run, both conventional and unconventional monetary policies improved economic uncertainty. The individual speed of adjustment in SSA indicated a significant correction of the uncertainty back to a steady state, though at different level and speed which could depend on different local factors. The study therefore recommends that, countries in SSA should further reduce their official interest rate as it is quite high compared to other developed nations. Though, conventional monetary policy is still effective in the short-run, based on the results of the individual countries, the unconventional monetary policy should be given priority in improving the economic uncertainty and return SSA nations to a steady state.

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Perceived Threat of Covid-19 and Willingness to Vaccinate amongst Wage Earners in Minna Metropolis: A Qualitative Exposition

¹**Bello Mohammed Aliyu**
(aliyubellomohammed@yahoo.com)

¹**Anas Danasabe Abubakar**
(anasworld010@gmail.com)

¹Department of Sociology, Ibrahim Badamasi Babangida University, Lapai, Niger State – Nigeria

Abstract

The outbreak of the Covid-19 pandemic threw Nigeria into a state of social disequilibrium. The imposition of lockdowns and new safety protocols did not receive a warm welcome from the people as there were gross violations of the safety protocols. The impetus for this study emanates from the violation of health safety protocols despite the danger of Covid-19 to human life. Therefore, the study assessed the perceived threat of the disease and the willingness to vaccinate among wage earners who, being the study respondents, are highly susceptible to infection. The health belief model was used to anchor the study. In-depth interview and focus group discussions were used to collect qualitative data from thirty six daily wage earners in Minna. Results from the study show a weak threat of covid-19 to the respondents as there is little or no fear for seriousness and susceptibility to the pandemic. Furthermore, the willingness of the respondents to take up the Covid-19 vaccine was poor and marred with suspicion and mistrust. Consequently, the study recommends adoption of more pragmatic approach in handling the Covid-19 cases by the NCDC for its danger to be appreciated; proper enforcement of the covid-19 safety protocols; and adequate incorporation of relevant bodies in the fight against the pandemic.

Keywords: Covid-19, Lockdown, Perceived Threat, Vaccination, Wage Earners

1. Introduction

The outbreak of Covid-19 pandemic shook the world to its spine. Consequently, the global paralysis of economic activities coupled with the banning of social and religious activities threw society into a state of social disequilibrium. This disequilibrium necessitated society's shift from the normal to a "new normal" (Herath & Herath, 2020). The outbreak of the pandemic came with fatal consequences which needed to be averted. Thus, in a bid to avert the fatal consequences, a common measure taken by most countries was the imposition of lockdowns (Kabir, 2020). In addition, other health regulatory measures were instituted and signed into law to curtail further rise in infections. These regulatory measures which are meant to guide people in their daily life activities include compulsory use of face masks, regular hand washing, observing social distancing, and avoidance of large gatherings, amongst others (Ahmad, 2021).



During the lockdown regimes, few days were designated for outing and restocking of basic necessities. On such window days, there were gross violations of the Covid-19 safety protocols. Ebonyi and Abok (2020) observe that people have little or no fear for the pandemic and have shelved all the safety measures put in place by government and the health authorities. The study observes that large crowd of people intermingle in the markets, banks and in worship centres. There was disregard or improper use of face mask, no hand washing equipment in many places and the few provided are not being utilised. No regard for social distancing amongst others. These actions defy the essence of the lockdown and reduce the chances of flattening the curve of Covid-19 in Nigeria. The gross violation of these safety protocols led to the establishment of mobile courts in many States of the country for the purpose of trying offenders (Achirga, 2021). Furthermore, on the 27th of January, 2021, the President of the Federal Republic of Nigeria signed into law the Covid-19 Health Protection Regulation as a way to ensure compliance to the safety protocols (Ahmad, 2021). Notwithstanding, most Nigerians remained adamant to attitudinal change and hardly accepted the reality of the pandemic's fatal consequences. Salami, Ayegboyin and Adedeji (2018) aver that during epidemics, there are challenges with compliance to safety protocols due to people's sociocultural backgrounds. The Ebola Virus Disease (EVD) faced challenges of containment in Nigeria owing to the sociocultural beliefs and practices of the people.

Consequently, the procurement of the AstraZeneca/Oxford vaccine which was to serve as a means of prevention and containment of the pandemic equally was marred with challenges. Generally, reception to vaccination has been poor in the country (Obasohan, Anosike, & Etsunyakpa, 2015). The case with polio vaccine is a good demonstration of this (Agbana, Kunle-Olowu, & Taiwo, 2018). With the prevailing attitude to the Covid-19 safety protocols coupled with the underlying attitude to vaccination in Nigeria, there are indications that the case of Covid-19 vaccine would not be different (Adebisi, Bolanriwa, Akande-Sholabi, & Lucero-Prisno, 2021). Located in the North-central geo-political zone of Nigeria, Niger State had its fair share of the Covid-19 burden. This is influenced by its proximity to Abuja, the nation's capital, which has been severely affected by the pandemic. While the State commenced its lockdown regime and subsequent enforcement of safety measures such as use of face mask, social distancing, hand washing, avoidance of crowd, banning of intra and interstate movements, etc., there were also gross violations of these safety protocols (Idris, 2021). Minna, State capital, was not left out in the unfortunate development and cases in the city surged. Consequently, the State established mobile courts which were authorised to try and prosecute the offenders (Yahaya, 2021). This study therefore seeks to investigate why people in Minna metropolis disregard Covid-19 health protocols and their attitude to vaccination. This sociological investigation would be guided by two carefully designed objectives, which is to assess the perceived threat of Covid-19 among wage earners in Minna metropolis; and to assess the willingness to vaccinate among wage earners in Minna metropolis. Wage earners who survive on daily earnings are at



higher risk of infection due to their daily encounter with large numbers of people in the course of their daily routine. Thus, they form the main focus of this study.

2. Literature

This study is anchored on the health belief model (HBM) of Hochbaum, Rosenstock and Kegels. The Health Belief Model (HBM) was introduced in the 1950s in United States when a group of researchers set out to search for reasons why tuberculosis treatment failed in some of the communities. The researchers, Hochbaum, Rosenstock and Kegels in the 1950s argue that an individual's knowledge of disease symptoms, severity and threat combine to influence an individual's response to a disease condition. Thus, the HBM makes use of a set of six constructs to buttress how the model works. Two of the constructs are utilised to establish the threat of covid-19 to the respondents in this study.

Perceived seriousness: this refers to a person's feelings about the seriousness or severity of a disease. Certain diseases (such as flu) are believed by people to be common and not life-threatening. As such, people are not startled by its occurrence and such diseases could be left untreated. The decision to take action usually depends on a person's assessment of the medical consequences (e.g. permanent disability or death) and social consequences (e.g. disruption of family and social life). Thus, when the consequences are perceived to be severe, actions would be taken to avoid getting infected.

Perceived susceptibility: this construct refers to the subjective perception an individual has towards contracting a disease. If an individual perceives a greater risk of contracting a disease, they would take measures to avert the danger of infection especially when such disease is perceived as a serious one. In this case, vaccinations against flu could be embarked upon in order to prevent its occurrence. Perceived seriousness of a disease combined with the perceived susceptibility to the disease forms what the proponents of the model call "perceived threat".

This model suits the study given its potency to assess the feeling of being threatened by the Covid-19 pandemic. An assessment of the respondents' perceived severity and susceptibility would reveal the real threat of Covid-19 to the respondents.

3. Methodology

The study covers Minna metropolis. Minna, the Niger State Capital, is made up of two local government areas namely, Bosso and Chanchaga Local Government Areas. The study area is a typical urban settlement and it hosts the Central Business District (CBD) where commercial activities are the major preoccupation of the settlers. The study population consist of individuals who earn their livelihoods on paid wages. Thus, all respondents were purposively drawn from a pool of daily wage earners who are believed to be highly susceptible to infection of the Covid-19. Respondents were drawn from daily wage earner who had spent at least one year working in the location of the study. For convenience, Minna metropolis was divided into two clusters, Chanchaga cluster and Bosso cluster, and respondents were assigned proportional to the size of each cluster. Respondents cut across



the following artisans: vulcanizers, building construction labourers, tea joint operators, Okada riders (commercial motorcyclists), barbers, petty traders, fruit sellers, car washers, and car accessories sellers. Each category of artisans had four respondents who were sampled randomly from the two clusters. A total of thirty six respondents were used for the study. Twenty one of the respondents were selected from the Chanchaga cluster while fifteen were selected from the Bosso cluster.

The study adopted in-depth interview as means of data collection. In addition, two focus group discussion sessions were held with the respondents. The interviews were used to achieve the first objective of the study while the focus group discussions were used to achieve the second objective of the study. Thematic analysis was used to analyse the data. Transcription and coding of the notes and recordings from the field was done by the researcher with careful attention being paid to emerging categories and themes. Every relevant detail from the interview and group discussions were carefully extracted and adequately represented. Results and discussions are presented in the next section.

4. Result

Findings from the data collected are presented in subheadings of emerging themes as follows: Perceived threat of Covid-19; perception of government's response to the pandemic and willingness to vaccinate.

Perceived Threat of Covid-19

Covid-19 pandemic is believed to be a serious health emergency and its fatality rate is shrouded in gross uncertainty. However, the perception of the respondents contradicts the scientific knowledge of the disease. The submissions by the respondents on the threat of covid-19 are given below. A 36 year old building construction labourer states:

"We heard that the disease (Covid-19) has killed many people in the western countries. But, African countries have not recorded such deaths because it is not their kind of disease. If the disease was a serious problem in Africa, Nigeria alone would have recorded several deaths and not this small number. In fact, there are more serious diseases worse than coronavirus in Nigeria."

Furthermore, there exists the belief that the pandemic is a divine sanction for the sacrileges committed by people. This is corroborated in the submissions of a 27 years old car washer:

"This disease is worse in countries that offend God most. You see it is the white people that say there is no God, and they are the ones doing same sex marriage which is something God does not like. So, we here don't have the problem because we don't sin like them."

While perceptions about the seriousness of the disease remain shaky, some of the respondents attribute the seriousness to climatic conditions as observed by the 28 years old barber:



“They said the disease is similar to catarrh, and it is when there is cold that we experience issues of catarrh. Nigeria has more heat than the white man’s country which is always cold. So, it is normal to have more cases of the disease there than here in Nigeria.”

Also, Covid-19 is believed to be a mere illusion and not a reality. This is the submissions of a 32 years fruit seller thus:

“Covid-19 is a foreign illness... we have hardly seen or heard of anybody that has contracted the illness let alone mention dying from it. Also, Ebola came and we saw the consequences but Corona is invisible since we can’t even see patients suffering from the disease. So, we cannot believe the disease is real let alone being dangerous.”

A further probe on the seriousness of covid-19 reveals that the disease is perceived to be a conspiracy of the western countries towards colonising the unsuspecting African countries. This is contained in the following submission by a 56 years old tea joint operator:

“Covid-19 is not a disease rather it is fabricated to gain control of African countries by the western world. That is why they are able to absorb the (economic) shock of the pandemic while African countries are struggling to recover. Every day on BBC news, I hear how they are always giving help or loans to African countries. They are simply planning to make us poorer.”

The above submissions show the respondents as perceiving gross mischief in the whole scenario of Covid-19. Thus, they are more likely to consider it as an unserious disease. Furthermore, the perceived susceptibility of the respondents to covid-19 shows they are inclined towards believing that a racial genetic dichotomy puts the Negro race at an advantageous position. This is summarised in the responses given below. A 33 years old car accessories seller states:

“The disease does not exist here in Africa. It is a western pandemic and has nothing to do with the black race. Black people are immune to the disease...”

In corroboration, a 58 years old Vulcaniser made a similar submission thus:

“Well, the disease may be real. But, surely it does not exist here in Minna and Niger State at large. In fact black men are not affected by it. The government is only trying to force the pandemic on the people since the death of the President’s Chief of Staff which may not even be as a result of Covid-19.”

Similarly, the perception on the seriousness and susceptibility of the disease is what has translated to poor compliance to the Covid-19 health protocols. This was the submission of a 34 years old Okada rider:



“This disease is not a problem here, if not all of us would have died. We did not use face mask and we are still alive and healthy. So, we cannot be suffering ourselves doing what is not necessary. In fact, it is those ‘Big men’ who use face mask that die often”

On a general note, the submissions above show that the wage earners do not perceive Covid-19 as a serious disease and do not also see themselves as susceptible to infection. This may be the reason why there is flagrant disregard for the safety protocols dished out by the Presidential Task Force (PTF) on Covid-19.

Willingness to Vaccinate

The respondents’ willingness to take the Covid-19 vaccine was also assessed. Vaccination was considered irrelevant given that death was avoidable during the peak days of the pandemic. This is expressed by a 38 years building construction labourer:

“...government has caused us hardships and life has become very difficult. Since that lock down period till this moment, we are just struggling to survive. After suffering us, they are now telling us to take vaccine. I won’t take it because I can’t die from the disease since it did no kill me when it was killing many people in the world.”

Suspicion of ulterior motives also clouded the respondents’ belief about the efficacy of the vaccine as stated by the 33 years old car accessories seller:

“In the past, we had cholera outbreak and the government did not lockdown any place. There are other disease like lassa fever and even Ebola, which all did not cause lockdown and vaccination. But now, because they want to reduce our population, they are forcing the wicked vaccine on us.”

From the above submissions, it is clear that the respondents do not see uptake of the Covid-19 vaccination as a reasonable decision. This is hinging on the fact that they had not perceived the pandemic as a threat. In fact, the response of government to the pandemic is what is considered a threat. In a similar submission, a 35 years old petty trader in Minna central market states:

“Gaskiya! I can’t believe this thing (Covid-19) is real. It is not even in Nigeria rather the government is just using it to steal money. You ask me whether I will take vaccination, I can’t vaccinate because I can’t be infected with what does not exist...”

To substantiate the perception on government’s response to the pandemic, a 26 years old car washer expresses the hardship faced:

“During the lockdown, life was difficult because we hardly could do anything. In fact, the restriction of movement stopped our business



because there were no cars to wash again and we didn't even see any palliative... and they are busy worrying us about corona vaccine.

Furthermore, there was high suspicion on the vaccine itself. The respondents shared the belief that the vaccine could change people's DNA and cause death in no distant time. This was expressed by a 58 years old Vulcaniser:

"We heard that anybody who takes the vaccine falls ill and hardly recovers. I have decided never to even try it because I don't want to die now."

The above submission illustrates a typical resistance to the Covid-19 vaccine as reported in the study of Adebisi, Bolanriwa, Akande-Sholabi, and Lucero-Prisno (2021).

Discussion

The study sets out to achieve two major objectives. The first is to establish the perceived threat of covid-19 among the respondents. This objective is germane to understanding people's compliance or noncompliance to health safety protocols put in place by government and health authorities. The higher the perceived threat of a disease, the higher the chances of compliance to health measures instituted to curtail the escalation of such diseases and vice versa. From the results presented in the preceding section, it is glaring that the respondents are not threatened by Covid-19 as expressed by majority of the respondents. This is partly because the respondents find little or no evidence to suggest the disruption of social life with no easily identifiable patient seen to be knocked down by the disease. This is in conformity with the findings of Ebonyi and Abok (2020). The subjective belief of the respondents which negates scientifically proven evidence poses a serious threat to the fight against Covid-19. This portends great danger especially given the fact that the opinion is held by residents of a major urban settlement. The implication is that there are chances of enormous community transmission of the virus. Consequently, it is worthy of mention that Covid-19 in Minna metropolis is being misconstrued by a significant number of residents who remain ignorantly susceptible to the virus. Thus, this finding is a pointer to a worrisome situation in Minna.

Secondly, the willingness of the respondents to vaccinate is low given the reservations they have for the vaccine. The respondents expressed fear of the Covid-19 vaccine even more than the disease itself. This is because they have heard scary tales of the consequences of the vaccine which they perceive as more fatal than even the disease itself. This prevailing mistrust and suspicion has culminated in unwillingness of the people to take the vaccine. This attitude to the vaccination substantiates the findings of Adebisi, Bolanriwa, Akande-Sholabi, and Lucero-Prisno (2021) in a study of willingness to vaccinate among health workers in Nigeria.

5. Conclusion and Recommendations

In conclusion, every disease perceived as a threat to social life elicits conformity to the health safety protocols instituted to curb the spread of such disease and vice versa.



Consequently, this paper concludes that there is low perceived threat of Covid-19 amongst wage earners in Minna, Niger State. In turn, this has negatively affected the willingness of the wage earners to vaccinate against Covid-19. Given the foregoing conclusion, the study recommends that the Federal Ministry of Health through the Nigeria Centre for Disease Control (NCDC) should take more practical steps towards enlightening the people on the pandemic rather than shrouding details of the infections, treatments and fatalities in secrecy. Specifically, the NCDC should match the data on infections with the number of patients put in isolation. This would reduce the fictitiousness of the data published daily and provide the necessary evidence in convincing the people on the reality of the pandemic. This can help improve compliance to the established safety protocols.

Concerned authorities such as the ministries of health, education, youths and sports development, and religious affairs should ensure adequate monitoring of activities in the city-centres in order to enforce the safety protocols. This includes use of facemask, hand washing or use of hand sanitizers, avoidance of large gatherings, and observing social distance. It is not enough to make the laws but their implementation must be taken seriously in order to avert subsequent waves of the pandemic. While procurement of the Covid-19 vaccine is a right step in the right direction, its uptake must be taken seriously and citizens must be adequately sensitised to avail themselves for administration of the vaccine. In this regard, religion has proven to be a veritable tool. Thus, religious leaders of various religions should be drafted as ambassadors of the campaign for Covid-19 vaccine to be taken by the people. In addition, traditional rulers also have a key role to play in supporting these efforts as their authority in the grassroots is significant in achieving success.

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Assessing the Freight Transport and Modal Logistics Infrastructure Connectivity in Apapa Seaport

¹Abdulmalik Muhammad Mustapha
(fadlulmalik@gmail.com)

²Sidikat Shitu
(siddyshitu@yahoo.com)

¹Shekwobagwu Paul Galadima
(galadimapaul11@gmail.com)

¹Department of Transport Management, IBB University Lapai, Niger State, Nigeria.

²Department of Economics, IBB University Lapai, Niger State, Nigeria.

Abstract

This study focuses on freight transport and modal logistics infrastructure connectivity in Apapa Seaport. The present system of freight movement and distribution from Nigerian seaports is not consistent with the best practices. The delay in cargo clearance from the port to the hinterland is a constraint to logistics schedule of road haulage. Primary data were obtained through the administration of structured questionnaires to clearing agents in Apapa Port and truck drivers that were systematically sampled at the Apapa exit gate. The data gathered were analyzed using descriptive and Anova analysis. The study revealed the availability of major modal logistics infrastructure connectivity that aids onward delivery however some of these logistics infrastructure are obsolete and in poor condition. Furthermore, result using Anova test revealed a statistically significant difference in the mean spatial distribution of cargo. It is therefore recommended that, there is need for a modal shift from road to rail or inland waterways for onward delivery of cargo to different inland container depots (ICDs) in the hinterland to promote sustainable transport system in Nigeria. And also an effective model for integrating different modes of transport in the Port for onward delivery.

Keywords: Freight, Logistics, Infrastructure, Connectivity, Port, Hinterland.

1. Introduction

The rapid growth of e-commerce demand fast response deliveries. Businesses have sought to sustain sophisticated short-cycle and manufacturing processes to meet customer requirements directly. Logistics infrastructure thereby conditions the effective performance of the logistics processes. The logistics infrastructure as a set of various facilities, equipment and technical devices facilitate the completion of the logistics processes in the logistics micro and macro-systems (Grzelakowski, 2014). Modal connectivity in seaport integrate or interconnect different modes of transportation; air, sea, land and pipeline for effective and efficient movement of cargoes through logistics facilities. Logistics facilities thereby tend to facilitate the movement of cargo as and when they are needed and desired



by the consignees. This helps in economic transactions, serving as a major enabler of growth of trade and commerce in an economy. The ports infrastructure connectivity which link an economy to the global markets contributes to economic development through decrease in shipping time, decrease in transport cost and employment creation (Ahmodu *et. al*, 2021). Due to economic transformation, cargoes need to be shipped from point of origin to point of destination at a minimal cost and time through modal connectivity for efficient and effective services. Economic transformation and development of any country are hardly possible without an efficient transport system (Salim, 2003; Lingaitiene, 2006).

Apapa Port is characterized with an intermodal connectivity that aid movement of cargo to different locations in Nigeria. The development of rail system and interconnection of it along some selected major cities of Nigeria to the major seaport is seen as a means to improve movement and delivery of goods across the Nation which can enhance the operational functionality of the Port through intermodal connectivity (Ndikom, 2004). The non-operation of the rail system in Nigeria seaports over several decades has result to the use of road network as the first leg journey for conveyance/evacuation of cargo from the Port to the hinterland through articulated trucks that has increased congestion and high rate of accidents on our roads. It is quite discouraging that the rail tracks laid at Apapa port linking cities are not effectively use which has compounded the problems of congestion along these route/corridors (Ndikom, 2011). The effective utilization of different mode of access in the Port will increase productivity, reduce congestion and promote modal shift. Modern transport and freight distribution system globally are adopting the best practices of multimodal transport that are reliable, timely, safe, and cost-effective.

The integration of sea, rail, road and pipeline transport is to control the entire chain of cargo distribution in an efficient, cost-effective and timely manner (Ubogu, 2011). Freight transportation has become a major element in an economy which need to adapt to the rapid change of economic trends. Modal logistics infrastructure thereby making all facilities of multimodal freight transportation process to be reliable in offering connectivity with other modes and have the flexibility to make adjustment to changes when alternative business opportunities are developed while the freight is still on transit. Intermodal transport and logistics are the key factors in the development of economic growth, spatial connectivity and market integration (Zecevic, 2012).

The modal logistics infrastructure connectivity in Apapa Port is not highly restructured which has led the present system of moving cargoes to be a major challenge. Integrating rail-road in the port for distribution of freight to the hinterland would impact positive efficient transport system/services, hence, encourage the incorporation of multimodal transport system (Ubogu, 2011). The delay in the time taken for onward delivery of cargo from Apapa Port to hinterlands has also been a constraint to logistics schedule. The weight of high volume of cargo evacuated by trucks plying the access road linking the Apapa-Ijora and Apapa-Mile2 via Ibadan road has led to deterioration of the road access creating portholes, ditches, which often causes truck accident/crash on the road resulting to some



cargo not reaching the consignees destinations. Many studies have been conducted on freight transport and modal logistics. A review of the studies of Daramola (2022), Etu (2017), Odeleye (2015), Adetunji and Atomode (2014), Somuyiwa (2010), Ubogu (2011), and Ojekunle (2004), revealed a focus on freight movement on specific corridors. This paper therefore analyze the spatial flow of cargo from Apapa Port to six geo-political zones in Nigeria by truck and also assess the logistics infrastructures in Apapa Port.

2. Literature Review

The Ullman's theory of Spatial Interaction was postulated by Ullman in 1956. This theory explains the reason for the basis of movement between places within a geographical space within the framework of distribution. The concept of complementarity under Ullman's theory explains the fact that for two spatially separated regions to interact there must be demand in one area and supply in the other area. This implies geographically that, there must be spatial interaction between regions. Therefore, there must be an exchange interaction between these regions thereby leading to what is called regional integration. This complementarity of supply and demand brings about movement and spatial interaction between one point of production and another point of consumption. Ullman's theory of spatial interaction explains that regions cannot be independent on their own, which is why there is need for interaction to exist. This model therefore helps to explain the movement of cargo from origin (i.e the seaport) to destination (i.e hinterland).

Recent studies on freight transport in Nigeria include Daramola (2022), Odeleye (2015), Adetunji and Atomode (2014), Ubogu (2011) and Ojekunle (2004). The study of Daramola (2022) in examining the implication of Nigeria's lopsided land transport structure for performance and efficiency in the freight transport sector, found that freight shippers will not explore modal comparative advantages such as capacity and lower freight rates except such advantages are complemented with competitiveness conferred by technology especially speed. The author recommends an upgrade in the existing rail tracks in a way that fast speed are assured. In the study of Odeleye (2015), it is revealed that a challenge exists with respect to integrated transport infrastructure in Nigeria, hence there are constraints to realizing seamless freight and passenger transport services. The author recommends public-private-partnerships (PPPs) to achieve a sustainable integrated transport infrastructure system. Adetunji and Atomode (2014) assess the urban freight movement for effective transport planning. It was revealed that the pattern of freight movement is dominated in such a way that the bulk of the freight (70.8%) originates from and (60%) terminates outside the metropolis. Hence, the need for appropriate measures to be incorporate into the urban transport planning for freight transport. The authors recommends that the revitalization and construction of light rail system are important to facilitate the movement of freight in the country at large. Ubogu (2011) in another study on the potentials of rail-road integration for port-hinterland freight transport. The purpose was to conduct an aerial coverage of truck haulage in Nigeria. Using descriptive analysis (percentage distribution) to analyze data obtained from 302 truck drivers at the seaport terminal. The main outcome showed 45.7% of their operations terminates within the port



cities and States close to the seaports that are mostly the industrialized areas of Nigeria. He further stated that populated industrial and commercial towns, excluding the port towns, are hinterland freight hubs that receives substantial quantity of maritime goods. The geographical location of industries and commercial centers across Nigeria influences the distribution of freight spatially. Similarly, Ojekunle (2004) carried out a study on urban freight transport. The purpose was to review urban freight flow in Nigeria. The study revealed that markets and industrial zones are the major freight generating and attracting points acting as the threshold of demand.

Freight transport is essential in most economic and social activity. Therefore, organizations rely on movement of goods ranging from large movement of bulk commodities to package delivery to maintain commerce (Somuyiwa, 2010). The demand for freight transportation results from the producers and consumers that are geographically apart. Considering the global trade, the unimodal road transport is no longer the feasible solution. This, thereby, necessitate other modes of transport (and their combinations) for the transportation of freight. The market share of freight transportation has witnessed several trends. In many countries including Nigeria, new markets are rising as the customer base is growing. In view of this, Ghiani, Laporte, and Musmanno, (2013) ascertained that effective and efficient transportation is necessarily required, as the share of transportation cost is significant in the supply chain. The goal of intermodal transport in movement of goods is to achieve economic efficiency. According to Somuyiwa and Dosunmu (2008), efficient logistics infrastructure is pertinent in reducing port congestion which will promote intermodality and optimize customer's service deliveries through effective supply chain. This allows customer to gain a competitive advantage over a competitor. Logistics management is customer driven, requires reduction in cycle time of parts and services and develops partnership with other companies that complement or supplement companies existing capabilities. Implementing logistics management requires suppliers and customers to work together in defining the strategic direction when dealing with certain markets. Customers expect consistent quality of products and services worldwide. Transport tends to be the main component of logistics service and its share in overall logistics cost has actually been increasing in recent years. The growth of containerized transport together with technological developments in improving the systems for transferring cargo between modes has considerably affected modern transport patterns and practices. In the recent practice, shippers and consignees often prefer to deal with one party who arranges for the transportation of cargoes from door to door and assumes responsibility throughout, irrespective of whether this is the party that actually carries out the different stages of the transport (Somuyiwa & Dosunmu, 2008).

3. Methodology

This study adopts descriptive research methods. The primary data were collected through structured questionnaire administered to the 287 clearing agents met in Apapa Port using a census sampling technique. A condon survey was also conducted on truck drivers for in-



transit freight at exit gate of Apapa seaport. A systematic sampling technique of every 5th sample was used to track truck driver for onward delivery. A total of 171 truck drivers were sampled for three days. The data gathered were analysed using descriptive statistical analysis, a network flow map and anova.

4. Results

The following major modal logistics infrastructures available in Apapa Port include road (truck/trailers) access, rail (wagon) access, waterways (marine) access, terminal facility/quay, warehouses, gantry cranes, straddle carriers, forklifts, vessels, containers, communication facilities and reach stackers. The Port has potentiality of integrating connectivity of modal logistics infrastructures necessary to facilitate the loading/evacuation of cargo from Apapa Port.

Table 1: Effectiveness of mode of transport network linked to Apapa Port

Variables	Frequency	Percent (%)
Road		
<i>Very Effective</i>	118	41.11
<i>Effective</i>	129	44.95
<i>Moderate</i>	40	13.94
<i>Less Effective</i>	-	
<i>Not Effective</i>	-	
Rail		
<i>Very Effective</i>	-	
<i>Effective</i>	-	
<i>Moderate</i>	69	24.04
<i>Less Effective</i>	174	60.63
<i>Not Effective</i>	44	15.33
Inland waterways		
<i>Very Effective</i>	-	
<i>Effective</i>	-	
<i>Moderate</i>	-	
<i>Less Effective</i>	73	25.44
<i>Not Effective</i>	214	74.56
Total	287	100.0

Source: Authors' Field Survey, 2022.

Table 1 thereby revealed the effectiveness of modes of transportation linking Apapa Port. Majority of the respondents constituting 44.95% affirmed that the road network system is effective while 41.11% attested that it is very effective. The railway network system is attested by 60.63% of the respondent to be less effective while 24.04% affirmed to be moderately effective. 74.56% constituting majority of the respondent affirmed that the inland waterway is not effective for evacuation of cargo. This therefore revealed that the



road network system is the most effective mode in Apapa Port. Though, the rail network system is operational but not as effective as the road.

Table 2: Duration it takes to clear a particular cargo

Days	Frequency	Percent (%)
1-7	105	36.5
8-14	78	27.2
15-21	53	18.5
22-28	29	10.1
1 Month and Above	22	7.7
Total	287	100.0

Source: Authors' Field Survey, 2022.

Table 2 shows the analysis of the days it takes to clear a particular cargo. The result revealed that 36.5% of the respondents attested that it takes 1-7 days to clear a particular cargo from the port, 27.2% attested to take 8-14 days, 18.5% indicated that it takes 15-21 days, 10.1% 22-28 days while 7.7% 1 month and above. The result revealed the inefficiency of the Port in cargo clearance under the guidelines of UNCTAD for cargo to be cleared within 48 hours-72 hours as soon as cargo arrive port of call. The delay in clearing of cargo is the indication of the obsolete nature of some major cargo handling facilities and long documentation processes.

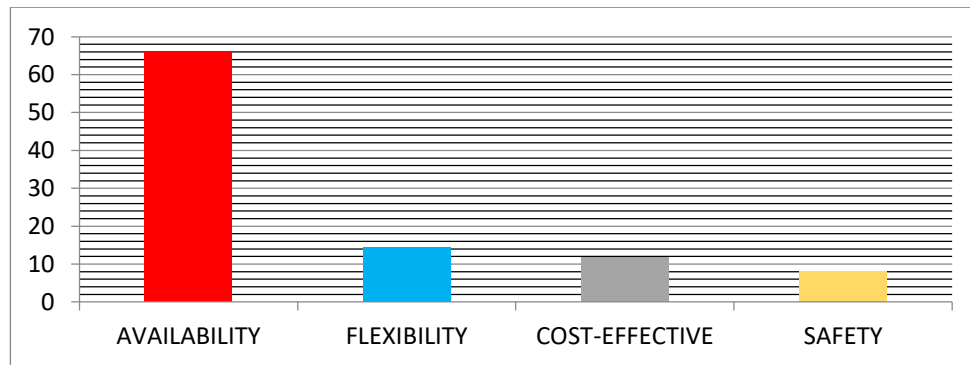


Fig. 1: Factors that determine choice of mode

Fig. 1 above shows the factors that determine choice of mode. 65.9% which represents the majority of the respondents, attested the availability of mode network influence their choice of mode, 14.3% is the flexibility, 11.8% cost effective and 8.0% safety. The result revealed the availability of road transport network system influences the choice of mode for onward delivery by the clearing agents.



Table 3: Origin-Destination survey of truck drivers

Seaport location	Lagos port complex Apapa
Estimated number of trucks exiting the gate per day	1140
5% of the total truck existing the gate per day	57
5% of the three days survey	171

Source: Authors' Field Survey, 2022.

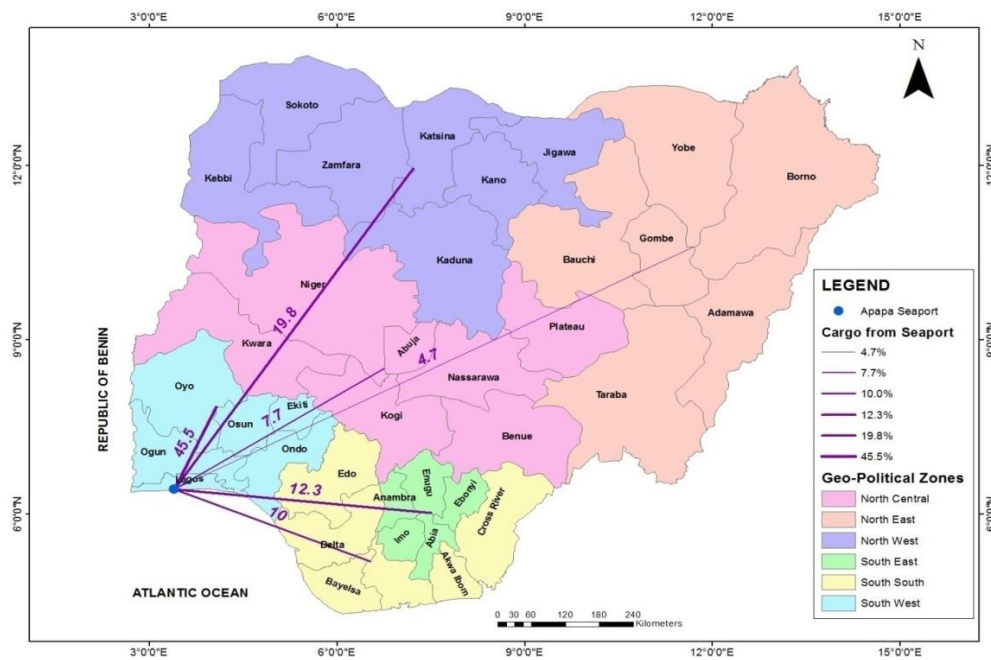


Fig. 2: Flow map showing aerial coverage of spatial distribution of cargo from seaport to hinterland by truck drivers.

Fig. 2 presents the aerial coverage of spatial flow of cargo by the truck drivers from Apapa seaport to the hinterlands. 45.5% of the cargo shipped emerge to be distributed to the South-West, 19.8% shipped to the North-West, 12.3% to the South-East, 10% to the South-South, 7.7% shipped to the North-Central, and 4.7% to the North-East.

Testing of Hypothesis

H₀: There is no significant difference in spatial flow of cargo to different locations (six geo-political zones in Nigeria) from Apapa port.



Table 3: Descriptive Statistics of Spatial Flow of Cargo by Truck Drivers to the Six Geo-Political Zones of Nigeria from Apapa Port

Geo-Political Zones	Number of States per zone	Mean	Standard Dev.
North-Central	6	2.167	1.169
North-East	3	2.667	2.082
North-West	4	8.500	3.873
South-East	4	5.250	4.349
South-South	5	3.400	2.510
South-West	5	15.600	13.221

Source: Authors' Field Survey, 2022.

Tables 3 showed the descriptive statistics of mean spatial flow of cargoes by truck drivers to six geo-political zones of Nigeria from Apapa Port. The result revealed a significant difference in the mean spatial flow of cargo to six geo-political zones in Nigeria with South-West having the highest mean compared to other zones.

Table 4: ANOVA Comparison of Mean Spatial Flow of Cargo from Apapa Port to Six Geo-Political Zones in Nigeria by Truck Drivers

Source of variation	Sum of Squares	Df	Mean Square	F _{cal}	F _{crit}	Significant level (p)
Between Groups	640.35	5	128.07	3.195*	2.68	0.027
Within Groups	841.65	21	40.08			
Total	1482.00	26				

*-Significant at 0.05 level of significance

Source: Authors' Field Survey, 2022.

Table 4 illustrates the ANOVA comparison of mean spatial flow of cargoes by truck drivers to six geo-political zones of Nigeria from Apapa Port. The result revealed a significant difference in the mean spatial flow of cargoes by truck drivers to the six geo-political zones of Nigeria from Apapa Port at 0.05 level of significance. Since the ($F_{cal} = 3.195 > F_{crit} = 2.68$; $df = 5, 21$; $p < 0.05$), the H_0 is rejected. Hence there was significant difference in the spatial distribution of cargoes to the six geo-political zones in Nigeria from Apapa port.

Since, the ANOVA statistics indicates there was significant difference in the mean spatial flow of cargo by truck drivers to the six geo-political zones of Nigeria from Apapa port, there is need to identify where the difference are, hence the need to carry out Duncan Post Hoc tests.

Table 5 showed a statistically significant difference in the mean spatial flow of cargoes between South-West (15.600) and North-Central (2.167), North-East (2.667), South-South (3.400) & South-East (5.250). However, there is no statistically significant difference in the mean spatial flow of the cargoes between South-West (15.600) and North-West (8.500).



Table 5: Presents the result of the Dungan Post Hoc tests.

Geo-Political Zone	Number of States	Significant level = 0.05	
		A	B
North-Central	6	2.167	
North-East	3	2.667	
South-South	5	3.400	
South-East	4	5.250	
North-West	4	8.500	8.500
South-West	5		15.600
Sig.		0.202	0.116

Source: Authors' Field Survey, 2022.

Discussion

The origin-destination survey showed the aerial coverage of spatial flow of cargo by the truck drivers from Apapa seaport to the hinterlands. The result revealed 45.5% of the maritime cargo shipped emerge to be distributed and terminated at the seaport state (Lagos State) and the surrounding states (Ogun, Ondo, Osun, and Oyo) located in the South-West zone, 19.8% shipped to the North-West zone, 12.3% to the South-East zone, 10% to the South-South zone, 7.7% shipped to the North-Central zone, and 4.7% to the North-East zone. It was further observed that states dominated with industrial and commercial centers are the most locations (hinterland freight hubs) maritime goods are substantially freight to from Apapa Port. The flow of cargo to industrial and commercial centers has geographically increase the reach of Apapa port. This is akin to the studies of Ojekunle, 2004; and Ubogu, 2011 that freight flow terminates in industrial and commercial zones in Nigeria which are known to be the generating and attracting nodes acting as a threshold of demand. The ANOVA test result showed descriptive statistics comparison of mean spatial flow of cargoes by truck drivers to six geo-political zones of Nigeria from Apapa Port. The result revealed a significant difference in the mean spatial flow of cargoes by truck drivers to the six geo-political zones of Nigeria from Apapa Port at 0.05 level of significance as ($F_{cal} = 3.195 > F_{crit} = 2.68$; $df = 5, 21$; $p < 0.05$). The Duncan Post Hoc tests result further identified where the difference are. There is statistically significant difference in the mean spatial flow of cargoes between South-West (15.600) and North-Central (2.167), North-East (2.667), South-South (3.400) & South-East (5.250) in favour of South-West zone. However, no statistically significant difference in the mean spatial flow of the cargoes between South-West (15.600) and North-West (8.500).

5. Conclusion and Recommendations

Modal logistics infrastructures needed in a Port to facilitates the loading/evacuation of cargo from Apapa Port. The logistics infrastructures aids in facilitating the loading and evacuation of cargo in the Port. However, the road network system is the most effective modes of transportation linking Apapa Port. It availability majorly influence the choice of mode for onward delivery by the clearing agents. Zones dominated with industrial and commercial centers tends to influence freight demand. From the findings, the South-West



and North-West zones receives more of the spatially flow of maritime goods. These zones therefore are dominated with industrial and commercial centers where economic activities take place thereby generating and attracting substantial quantity of maritime goods shipped from Apapa seaport. The geographical demand in one area and supply in another leads to a greater exchange of regional interaction.

Modern logistics infrastructures should be adequately provided for each terminal of the Port to meet the demand of high volume of cargo handled at the Port in other to reduce the time for cargo clearance. Documentation processes should be more automated or computerize at each terminal in Apapa Port to reduce waiting time for onward delivery. There is need for a modal shift from road to rail or inland waterways for onward delivery of cargo to different inland container depots (ICDs) in the hinterland to promote sustainable transport system in Nigeria. Hence, this will reduce the volume of trucks plying the road network. Furthermore, the railway transport system should be improved adequately and highly encouraged for onward delivery in order to reduce port congestion, cost and accidents on the road.

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Assessment of Informal Sector and Poverty Alleviation in Nigeria: A Study of Commercial Motorcycle Riders in Minna Metropolis

¹ **Mohammed Yelwa**
(yelwamhmd@gmail.com)

² **Abdurrauf Babalola**
(abdclement@yahoo.com)

¹Department of Economics, University of Abuja- Nigeria,
²Al-Hikmah University, Ilorin, Nigeria.

Abstract

The study investigated the effect of the informal sector on poverty alleviation amongst commercial motorcycle riders in Minna Metropolis of Niger state Nigeria. The research used primary data collected from 379 respondents randomly selected from a population of 7273 registered motorcycle operators in Minna Metropolis. Descriptive statistics and regression analysis were used in analyzing the data. Employing ordinary least squares (OLS) technique, three econometric models were estimated and tested using income, Consumption expenditure and wealth accumulation as dependent variables while experience, age, level of education, marital status, number of dependents, mode of operation, number of hours worked per day and daily turnover of the respondents as explanatory variables. The study revealed that 93% of the operators earn above the international poverty line of one dollar a day. Furthermore, experience, mode of operation, number of hours worked and turnover were the major determinants of poverty alleviation of the commercial motorcycle riders in Minna Metropolitan area. The implication of these findings points to the need for serious attention to the sector through rigorous regulation and funding so that it will help in solving unemployment and poverty problems in Minna metropolis, Niger state and the country at large.

Keywords: Poverty Line, Poverty Alleviation, Informal Sector, Unemployment

1. Introduction

Reduction of poverty is part of government goals to be achieved within a set period of time due to the intrinsic repercussion of actions from the people in poor condition and desperation. A meaningful quantum of the poor in most low-income countries like Nigeria is in to the informal sector where efficiency in output and income are low. One major service rendered in this sector is informal movement of goods and persons, particularly intra-urban commercial motorcycle services. Presently, commercial motorcycle business operation has taken advantage of the deplorable state of Nigeria's transport system to create an economic niche.

Although the operation of motorcycles by individuals had existed since time immemorial in Nigeria, some used it to move goods to their destinations and others to hawk their goods (Olubomehin, 2012). The use of motorcycles for commercial transport began in Calabar, the capital of Cross River State of Nigeria in the early 1970s. This use grew after the



nationwide retrenchment of civil servants in 1975/76 (Adesanya, 1998). This means by implication that, commercial motorcycle became a succor to shock-absorb the unemployment that occurred at that particular point in time. Apart from Calabar, written indication also confirmed that Okada was first introduced for public transport in the northern Nigerian town of Yola in 1970 (Ogunsanya & Galtima, 1993). By the 1980s, the use of motorcycles for public transportation had spread to other parts of Nigeria. As at today, there is virtually no area that commercial motorcycles have not been operating except places that have placed ban on them. This could be the main reason why Arosanyin, *et. al.* (2011) said Okada transport operators take the job as last resort in order to generate income for them and their families to live on. Ane, *et al.* (2011) also explained that informal public transport activities are many even in the advanced countries depending on their type, size and the mode of operation. Areas where road network is poor, are best places for these commercial motorcyclists to ply owing to the safety challenges imposed by the operators. This is because areas that could be impossible or extremely difficult for vehicles to operate are easily plied by these motorcycles and hence making transportation easy especially farmers and villages workers. While many research works have been conducted on the ability of this informal sector in fixing unemployed persons in Nigeria (Ogunrinola, 1991; Folawewo, 2006); very few research works have been carried out on the income and employment generation as well as the poverty reduction implications of commercial motorcycle business operation in Nigeria.

In fact, there is no well-known research work on the impact of commercial motorcycle riding business on poverty alleviation in Minna Metropolis in particular. This research, therefore, intends to study the effect of informal self-employment on poverty alleviation with specific reference to the commercial motor cycle business operation in Minna Metropolis of Niger State, Nigeria. The research looked at the magnitude of the relationship between income (INC), Consumption Expenditure (CEX) and Wealth accumulation (WAC) as proxies for Poverty alleviation and other socio-economic factor that are expected to hinder the growth of this variable hence affecting poverty alleviation.

2. Literature Review

A few empirical works have been carried out on the operation of commercial motorcycles as a means of public transportation in Nigeria. For instant, in a study on the use of motorcycle as means of public passenger traffic in Yola town, Adamawa State by Ogunsanya and Galtima (1993), economic depression and inadequate transport facilities were identified as some of the factors that gave rise to the use of motorcycles as means of public transportation in Nigeria. Fasakin (2001) also conducted a study on the factors affecting the daily profits of commercial motorcycle operators in Akure, the capital of Ondo State, South West Nigeria Furthermore, in an Inaugural Public Lecture on the subject of public transportation and among other issues in Nigeria, Oyesiku (2002) examined the increase in the operation of *Okada* for public transportation in Nigeria pointing out that the decrease in the supply of new vehicles of all types since the 1970s contributed to the emergence of motorcycles for commercial transportation. Again, Agossou (2004) asserted



that *okada* business is one of the major means of transportation in Nigeria and, by far, the most common form of informal transport system in the country. Ogunrinola (2010) investigating the activities of informal self-employment and poverty Mitigation: Empirical Evidence from motorcycle taxi Riders in Nigeria, explained that, in urban areas, the motorcycle taxis (popularly called "Okada", is a large source of provision of self-employment and it provides income for many of the urban unemployed in south west Nigeria. However, it has a huge implication on public health of the masses as they do not comply with safety measures in carrying out their operations.

Muhammad (2014) conducted a study on the role of informal self-employment and poverty Reduction in Sokoto metropolis of Nigeria: A case study of commercial tricycle and motorcycle taxi Business. The study used multiple regression analysis to investigate the relationship between the socio-economic characteristics of the riders and his income generation, consumption expenditure and wealth accumulation as proxy for poverty reduction. The result shows that experience, age, number of dependents and number of hours in business are the prime determinants of poverty alleviation of the riders in the metropolis. Yakubu (2012) evaluated the determinants of earning income within Okada operators in Kwara state using primary data of questionnaire administered in both rural and urban area of Kwara state. Employing modified Mincerian equation to analyse the data gotten, he found out that riders age, location and license holding directly determine *Okada* earnings, while average fare per trip inversely determine earnings. Solaja, Kalejaiye, and Itsuokor (2013) examined the problems of commercial motorcycle job in Etsako West local government area, Edo state, Nigeria. Collecting primary data through 255 questionnaires and 10 in-depth interview and employing univariate and content analyses, their findings showed that social stigmatization as a result of use of *okada* for criminal activities, lack of protection, over-speeding, non-compliance to traffic rules, among others, are the major issues of commercial motorcycle riders in the local government in Edo state.

The most recent of work done on informal sector in relation to commercial motorcycle is that of Danjibo, Olasupo, and Ojo, (2019). They studied the impact of Okada on public health and safety using case study research design for six local government areas in Ibadan, the Oyo state capital. Data collection was from both secondary and primary sources. Result of their research divulged that, generally, commercial motorcyclists failed to comply with safety measures by the Federal Road Safety Act, such as use of helmet, wearing of protective clothes, not overloading, not to take alcohol while driving among others, and thus, they cause health havards in the society. Their findings also revealed that carbon emission from motorcycles is detrimental to public health.

3. Methodology

This section discusses the methodology and analytical design for the study. Issues discussed include sampling and sampling technique, technique of data analysis and model estimation. Minna is a city located in north Central Nigeria and the largest state in the country in terms of land mass it is the capital city of Niger state, and other major cities are



Bida, Kotangora and Suleja. Minna has an estimated population of 304,113 as at 2007. Minna is currently the largest city in Niger state, followed by Suleja (416, 518), Bida (178,840) and Kotangora (127,000). The economy of Minna is characterized by a large area of fertile land for both the raining and dry farming. The economy is based largely on subsistence crops, livestock, and large deposit of uranium. The informal sector activity is a major source of livelihood of the inhabitants of Minna Niger state. The population of the registered commercial motorcycle riders in Minna metropolis stood at 7273. as at December, 2019 according to Amalgamated Commercial Motor-cycle Owners and Riders Association of Nigeria, Niger state chapter. Sampling is a process used in analysis where a predetermined number of observations will be taken from a larger population for a general analysis. Random sampling is a method of selection where all items in the population have an equal chance of being selected. The target occupation is Commercial Motorcycle Riders (*Kabu-Kabu, Okada or Achaba* as locally known). A sample of 379 commercial motorcyclist riders were randomly selected for the research out of the 7273 registered association members of the occupational group. The sample figure was obtained using the formula by Yamani's (1968) as used in Hussaini and Malami (2012), Usman (2012) and Yusuf (2013).

To test the role of informal sector self-employment activities on poverty alleviation, three functional models were estimated. The models were adapted from the work of Ogunrinola (2011) as follows: Model one uses income of the respondents as proxy for poverty alleviation, model two used consumption expenditure while model three used wealth accumulation and all the three variables as the dependent variables while other socio-economic characteristics of the rider that is expected to affect his economic activities are the independent variables. The new form of the models is follows

$$POV = f(EXP, AGE, MOP, MST, NOD, HOP, TOV) \dots\dots\dots 1$$

Then, the econometric model created three equations thus was derived as follows:

$$INC = \alpha + \beta_1EXP + \beta_2AGE + \beta_3MOP + \beta_4MST + \beta_5NOD + \beta_6HOP + \beta_7TOV + e \dots\dots\dots 2$$

$$CEX = \alpha + \beta_1EXP + \beta_2AGE + \beta_3MOP + \beta_4MST + \beta_5NOD + \beta_6HOP + \beta_7TOV + e \dots\dots\dots 3$$

$$WAC = \alpha + \beta_1EXP + \beta_2AGE + \beta_3MOP + \beta_4MST + \beta_5NOD + \beta_6HOP + \beta_7TOV + e \dots\dots\dots 4$$

Where; INC = Average Daily income, CEX= Average Consumption Expenditure, WAC= Wealth Accumulation EXP = Experience, AGE = Age, MOP = Mode of Operation, MST = Marital Status, NOD = Number of Dependents, HOP= Hours of Operation, TOV=Turnover, e = Error term, α = Constant term, and β_1 to β_7 are parameters of the model. The three Models are to test the relationship between poverty level and other social economic factor. Income, consumption expenditure and wealth accumulation are proxy for poverty level



4. Results

Three hundred and seventy nine questionnaires were distributed but three hundred and forty were retrieved and used for the analysis. The result is split into two: the descriptive statistic which provides a description of the respondents' personal characteristics and the profile of his business activities and the regression results that answers some of the research questions and test the research hypotheses.

Descriptive Statistics

The descriptive statistic result is in two categories; the summary of the respondents' personal characteristics and the profile of his business activities

Table 1: Showing personal profile of the respondents.

Responds	Frequency	Percentage
Age (year)		
10---20	24	10.00
21---30	212	64.04
31---40	88	1.08
41---50	6	19.25
Religion		
Islam	326	97.3
Christianity	9	2.3
Marital status		
Single	151	44.4
Married	158	46.5
Divorce	31	9.1
Number of Dependents		
0---5	282	70.35
6---10	45	23.23
11---15	13	3.10
Educational qualification		
Islamic/Arabic	110	32.4
Vocational	26	7.6
Primary	57	16.8
Secondary	98	28.8
Tertiary	49	14.4
Total	340	100

Source: Field Survey, 2019

Age, Religion, marital status, and education of the respondents portraying their personal characteristics were evaluated and showcased in Table 1. The outcome indicates that a large number of the respondents in the study area were youth with the average age of about



The profile of the operator's business activities is presented in the table below

Table 2: Showing Profile of Operators Business Activities.

Responds	Frequency	Percentage
Experience (year)		
1 to 5	188	55.3
6 to 10	116	34.1
11 to 15	30	8.8
16 to 20	6	1.8
Mode of Operation		
Hired operator	70	20.6
Hire purchase	32	9.4
Owners operator	238	70.0
Hours worked per Day		
1 to 5	30	8.8
6 to 10	209	61.5
11 to 15	101	29.7
Daily Turnover		
500 to 1000	54	15.9
1100 to 1500	109	32.1
1600 to 2000	104	30.6
2100 to 2500	37	10.9
above 2500	36	10.6
Daily Profit		
100 to 1000	24	7.1
600 to 1000	161	47.4
1100 to 1500	105	30.9
1600 to 2000	36	10.6
above 2000	14	4.1
Wealth Accumulated		
10000 to 50000	95	27.9
51000 to 90000	97	28.5
91000 to 140000	33	9.7
141000 to 180000	57	16.8
above 180000	58	17.1
Aver. Daily Expenditure		
100 to 500	157	46.2
600 to 1000	174	51.2
1100 to 1500	7	2.1
1600 to 2000	2	.6
Total	340	100.0

Source: Field Survey, 2019.

27 years. Similarly, more than 97% of the respondents were Muslims. On the marital status 47% of the respondents are married while the other remaining respondents are not married. This is not surprising considering that the average age of the respondents being 27 years.



Note that under normal circumstances, youth in most part of the rural and semi urban areas of developing countries like Minna – Niger state in Nigeria got married before their 30th birthdays. The average number of children in this study is also not astonishing considering the average age of the respondents. The level of educational achievement of the respondents show that 32.4% attended Islamic schools and they are on the vocational trainings which is not unexpected since about 15% of the *okada* riders at least attain one tertiary education or another. These are categories of graduates that did not get job and revolve to join the business of riding motorcycles to earn a living

Multiple Regression Result

The result of Multiple Regression analysis on the factors determining poverty level of the Self-employed motorcycle riders using income as proxy for poverty is show cased in Table 3. The constant variable representing other variables not mentioned in the model is significant at 1%. The $R^2 = 0.737$ and the $F = 116.090$. From the model, coefficients of independent variables are as follows; Experience of the rider ($\beta = 0.690$), Age of the rider ($\beta = -0.132$), Level of Education of the rider ($\beta = 0.012$), Mode of Operation ($\beta = 0.072$), Marital Status ($\beta = -0.021$), Number of Dependents ($\beta = -0.033$), Number of Hours Worked ($\beta = -0.085$) and Turnover ($\beta = 0.831$). The coefficient of experience of the rider (EXP) has a positive sign and it is significant at 5% level. This shows that experience is an important determinant of the income of the self-employed motor cycle riders in Minna Metropolis. Similarly, the coefficient of age of the rider (AGE) is ($\beta = -0.132$). It carried an inversely signed and significant at 1% since its probability is quite low at 0.000. The result is in line with our *a priori* expectation and thus implies that, the higher the age of the rider the lower the income he can generate in the business. This may be due to the fact that, young riders may have more strength to take longer hours doing the business than the older ones.

Table 3: Regression Result on Income with Income as Dependent variable

Variables	Coefficient	Std. Error	T	Sig.
(Constant)		.172	6.031	.000*
EXP	.690	.044	1.970	.050***
AGE	-.132	.050	-3.841	.000*
EDU	.012	.018	.397	.691
MOP	-.072	.033	-2.470	.014**
MST	.021	.048	.622	.535
NOD	-.033	.061	-1.016	.310
HOP	.085	.055	2.457	.015**
TOV	.831	.026	24.471	.000*

$R^2 = 0.737$

$F = 116.090$

Significant at 1% (*); 5% (**); 10% (***) levels.

Source: Computation extract from the Authors, 2019

Moreover, the coefficient of Education (EDU) of the rider is 0.012. The coefficient has positive sign but is not statistically significant at any level. The interpretation is that, education is not a major determinant of the income of the self-employed motor cycle riders



in the Metropolis. The coefficient of Mode of operation (MOP) is -0.072, has the correct negative sign and significant at 5% level. This implies that owners' operator riders generate more income in the motor cycle business than hired operators and hire purchase riders. the coefficient of Marital status (MST) is 0.021. The impact is direct but not significant, even at 10% level. This implies therefore that, marital status is not an important factor that determines the income level of the riders. Number of dependent is another independent variable that was studied. The coefficient is -0.033 which indicate an inverse effect on the dependent variable. However, the effect is not significant, as shown by its corresponding standard error and t-statistics. It is negative and statistically not significant. This implies that number of dependents just like the marital status is not a major determinant of the income level of the motor cycle riders. The coefficient of Number of Hours of operation (HOP) is 0.085, showing that HOP has a direct influence on the dependent variable and the influence is significant at 5%. This implies that Hours of operation is a main factor that influences the income capacity of the motor cycle riding business in Minna metropolis. In other word the higher the hours worked the higher the income in the business lastly, the coefficient of Turnover (TOV) is 0.831. It is positive and statistically significant at 1%. The magnitude of the regressor of turnover place it as a major factor that influences the income level of the Business. The R^2 for income stands at 0.733, whereas F-statistics coefficient was found to be 116.090. This indicates that all the explanatory variables are responsible for about 73.3% variation in the dependent variable. More so, the model was found to be sufficient in explaining the relationship among the variables. This implies that there is a significant relationship between the riders' socio-economic characteristics and their ability to generate income in the business, hence we reject null hypothesis that there is no significant relationship. Therefore, it is obvious that only EXP, AGE, MOP, HOP and TOV are the main determinant of income of the motor cycle riding business in Minna Metropolis of Niger state, Nigeria

Table 4: Regression Result on Daily Consumption Expenditure as Dependent variable

Variables	Coefficient	Std. Error	T	Sig.
(Constant)		.184	3.589	.000*
EXP	.240	.048	3.922	.000*
AGE	.055	.054	.922	.357
EDU	.037	.019	.737	.462
MOP	.090	.036	1.759	.079***
MST	-.090	.052	-1.540	.125
NOD	.134	.065	2.373	.018**
HOP	.096	.059	1.580	.115
TOV	.327	.028	5.536	.000*
$R^2 = 0.204$				
$F = 10.582$				

Significant at 1% (*); 5% (**); 10% (***) levels.

Source: Computation extract from the Authors, 2019



The Result of Multiple Regression Analysis on the factors determining poverty level of the Self-employed Motorcycle Riders using Average Daily Expenditure as proxy for poverty is presented in Table 4. The result of multiple regression analysis using Average Daily Consumption Expenditure as proxy for poverty level is presented in Table 4. The $R^2 = 0.204$. and the $F = 10.582$. Meaning that more than 20% of the variation in the average expenditure of the respondents is accounted for by independent variables are as follows; Experience of the rider (0.240), Age of the rider (- 0.055), Level of Education of the rider (0.037), Mode of Operation (0.090), Marital Status (-0.090), Number of Dependents (- 0.134), Number of Hours Worked (-0.096) and Turnover (0.327).The coefficient of experience of the riders (EXP) has a positive sign and significant at 1% level. The result confirms the earlier result presented using income as proxy for level of poverty. It indicated that experience is a major determinant of the daily expenditure of the self-employed motor cycle riders in Minna Metropolis. However, the coefficient of age of the rider (AGE) carries a negative sign but is not significant. This is contrary to the result presented earlier. It implies that, age is not a determinant of the daily expenditure of the riders in the study. The coefficient of Education (EDU) of the rider is 0.037 and also positive but not statistically significant at any level. This show that is education is not a major determinant of the daily expenditure of the self-employer motor cycle riders in the Metropolis of the study. In line with *a priori* expectation, the coefficient of Mode of operation (MOP) is $\beta = 0.090$, it carries a positive sign and statistically significant at 10%. This implies that owners' operator riders spend more than hired operators and hire purchase riders. The result is similar to the earlier result presented. The coefficient of Marital status (MST) is $\beta = -0.090$. It carries a negative sign but statistically not significant at any level. This implies that marital status is not a determinant of the daily expenditure of the riders in the study. The coefficient of the Number of dependents is positive and statistically significant at 5%. This confirms our *a priori* expectation implies that number of dependents is a major determinant of the income level of the motor cycle riders. The positive relationship indicates that the higher the number of your dependent the higher your expenditure. The coefficient of Number of Hours of operation (HOP) is 0.085. It is positive but statistically not significant at any level this implies that Hours of operation is not a major factor that influences the daily expenditure of the motor cycle riders in metropolis. The coefficient of Turnover (TOV) is 0.327. It is positive and statistically significant at 1%. The result is similar to the result presented in the income model it implies that turnover is a major determinant of both income and expenditure of the motor cycle commercial riders in Minna metropolis. The R^2 for employment stood at 0.204, whereas F-statistics coefficient was found to be 10.582. This implies that all the variables were approximately jointly significant. The model was found to be adequate in explaining the relationship between dependent variable and the independent variables. This implies that there is a significant relationship between riders' socio-economic characteristics and their daily expenditure. Therefore we reject null hypothesis two and accept the alternative hypothesis. It shows that the only determinants of the daily expenditure of the motor cycle riding business in Minna



Metropolis of Niger state of Nigeria are experience (EXP), mode of operation (MOP), number of dependents (NOD) and turnover (TOV).

The Result of Multiple Regression analysis on the factors determining poverty level of the Self-employed motorcycle riders using wealth accumulation as proxy for poverty is presented in Table 4.5. The constant variable in the model representing other variables not mentioned in the model is statistically not significant at any level. The $R^2 = 0.156$ and the $F = 7.627$. From the model, coefficients of independent variables are as follows; Experience of the rider (0.015), Age of the rider (- 0.064), Level of Education of the rider (0.168), Mode of Operation ($\beta = 0.288$), Marital Status (-0.063), Number of Dependents (-0.023), Number of Hours Worked (-0.173) and Turnover (-0.173). From the result, the coefficient of experience of the rider (EXP) has a positive sign and statistically significant at 5% level. This is in line with our *a priori* expectation. This shows that experienced riders accumulate more wealth than the less experienced riders in the self-employed commercial motor cycle riding in Minna Metropolis. Similarly, the coefficient of age of the rider (AGE) is (- 0.064), and it carries a negative sign but is statistically not significant. This is in line with our *a priori* expectation. It implies that, age is not a determinant of wealth accumulation in the commercial motor cycle riding business in the metropolis. Moreover, the coefficient of Education (EDU) of the rider is 0.168. It has positive sign and statistically significant at 1% level. The interpretation is that, education is a major determinant of the wealth accumulation of the self-employer motor cycle riders in the Metropolis. In other word educated rider accumulate for asset from their income in the business than the less educated rider

Table 5: Regression Result on wealth accumulation as Dependent variable

Variables	Coefficient	Std. Error	T	Sig.
(Constant)		.490	1.076	.283
EXP	.150	.127	2.383	.018**
AGE	-.064	.144	-1.041	.299
EDU	.168	.051	3.236	.001*
MOP	.288	.094	5.484	.000*
MST	-.063	.138	-1.050	.294
NOD	.023	.173	.398	.691
HOP	.173	.156	2.783	.006***
TOV	.173	.076	2.843	.005**
$R^2 = 0.156$				
$F = 7.627$				

Significant at 1% (*); 5% (**); 10% (***) levels.
 Source: Computation extract from the Authors, 2019

The coefficient of Mode of operation (MOP) is -0.288, with the expected inverse sign and is found to be significant at 1%. This implies that owners' operator riders accumulate more wealth than the hired operators and hire purchase riders. This may be because the previous result shows that owner operators get more income in the motor cycle business than hired operators and hire purchase rides so they may accumulate more assets. The coefficient of



Marital status (MST) is -0.063 and is negative but statistically not significant at any level. This implies that marital status is not a major factor that determines the wealth accumulation level of the riders. Number of dependents is another independent variable that was studied. The coefficient is 0.023. It is positive but statistically not significant. This implies that number of dependents just like the marital status is not a major determinant of the wealth accumulation of the motor cycle riders. The coefficient of Number of Hours of operation (HOP) is 0.173. It is positive and statistically significant at 10%. This implies that Hours of operation is a major factor that influences the capacity of the motor cycle riding business in metropolis to accumulate wealth. In other word the high the hours worked the higher the wealth accumulation. Lastly, the coefficient of Turnover (TOV) is 0.1731. It is positive and statistically significant at 5%. This shows that turnover is the major factor that influences the wealth accumulation of the rider. The R^2 for employment stood at 0.156, whereas F-statistics coefficient was found to be 7.627. This implies that all the variables were approximately jointly significant. Even though the R^2 is low but the value of the F-statistics in the model was found to be adequate in explaining the relationship among the variables. This implies that there is a significant relationship between rider's socio-economic characteristics and his ability to accumulate wealth. Therefore, the null hypothesis three is rejected and the alternative hypothesis is accepted. Consequently, it is clear that only experience (EXP) and Education (EDU), mode of operation (MOP), hours worked (HOP) and turnover are the determinants of wealth accumulation of the motor cycle riding business in Minna Metropolis of Niger state of Nigeria.

5. Conclusion and Recommendations

One of the major finding of the study revealed that commercial motorcycle riding business in Minna Metropolis is very important tool in poverty alleviation in the state that the average daily income of the motorcycle riders is above the national poverty line of two dollars a day. . The study further revealed that experience (EXP) , age (AGE), mode of operation (MOP), hours worked (HOP) and turnover (TOV) are the main determinant of poverty alleviation for the commercial motorcycle riders in Minna Metropolis of Niger state, Nigeria. The study utilized income, consumption and asset accumulation of the riders as the yardstick for measuring the level of poverty for the respondents

Also, the study revealed that commercial motorcycle business operation in study area serve majority of the market participants' means of livelihood. Accordingly, it generates employment opportunity, most especially for the youth in and around the Minna Metropolitan area of Niger state. Overall, on the basis of the aforementioned findings of the study, the following policy recommendations are put forward: The time has come for the government at all levels to take a holistic approach at the commercial motorcycle business operation with a view to strengthening the overall strategy of regulating the conduct of the operators. Consideration should be made to bring on board public private partnerships in managing the motorcycle industry in a manner that is economically viable and sustainable. Government should regulate the sector properly and promote safety net of the



riders and the pedestrian. Federal road safety commission and other related agencies should be instructed to conduct training of the riders to minimise road accident and other related traffic problems associated with the business. Finally, further research should be undertaken to investigate the effect of having saving schemes for the motorcycle operators on their livelihoods

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Factors Associated With Entrepreneurship Development among Graduates in Abuja Municipal Area Council

¹**T. Alabi**

(tope.alabi@uniabuja.edu.ng)

¹**U. J. Salami**

(usmanjsalami@gmail.com)

¹Department of Sociology, University of Abuja, Abuja, Nigeria

Abstract

This study examines various factors associated with entrepreneurship development as it examines the perception of unemployed graduates on entrepreneurship in AMAC. The sample size of 395 was derived using Taro Yamane Statistical Formula. The study employed cluster sampling in the selection of respondents as 350 questionnaires were administered and 45 respondents interviewed. The quantitative data (obtained through questionnaire) was analyzed using simple statistical percentages while the qualitative data (derived from interview) was analyzed in narrative and descriptive form. Beside chi-square, contingency was used to determine significant test. The research findings demonstrated that skills development whether domestic, business, agriculture, technical and computer will facilitate job creation though, negative displacement factors like unemployment, job insecurity, etc tend to encourage entrepreneurship. On the other hand, the study further revealed that lack of fund, entrepreneurial skill, policy inconsistency, inadequate infrastructure, innovative ideas and risk are factors preventing entrepreneurship. The study proffers recommendations that entrepreneurial trainings should be provided by experienced entrepreneur or qualified consultants to provide expertise knowledge and mentorship, development of skills should be encouraged as skill acquisition centres is developed in all twelve (12) political wards in AMAC for easy accessibility. AMAC and Ministry of Federal Capital Territory (MFCT) should collaborate with Bank of Industry (BOI) to provide credit facilities to interested graduates to enhance more participation in entrepreneurship and government should embark on infrastructure development to reduce unit cost of production in AMAC particularly in satellite communities.

Keywords: Entrepreneurship, Graduates, Unemployment, Wealth, Job Creation

1. Introduction

Technological innovation driven by scientific research has led to radical social and economic changes. Companies like Apple, Face book, Cisco and Genen tech, all derived their success in part due to the innovative application of technology (Igwe, 2017). On a general note, entrepreneurship provides the creative force of economic development because entrepreneurs initiate economic and industrial change by creating new goods and services, new firms and innovative solutions to local and global needs. And in no lesser note, entrepreneurship plays a vital role in the expansion of opportunity and unpacks



individual initiative and creativity (Adofu & Akoji, 2013). From the entrepreneurial epicenter of Silicon Valley (Intel, Apple, Facebook, Youtube, to mention but few) to emerging entrepreneurial centers around the world, new venture creation and innovation are the driving forces of progress for mankind (Weihrich, Cannice & Koontz, 2010, Adeshina, 2013).

2. Literature Review

Entrepreneurship is contextualized within three central underlying dimension; innovation, risk taking and creativity. According to Dollinger (2008), innovation is the specific function of entrepreneurship. It is the means by which entrepreneur either creates new wealth producing resource or endows existing resources with enhanced potential for reacting wealth. Additionally, innovation describes how entrepreneurs search for new opportunities or the way in which ideas are brought to profitable conclusion. The test of innovation lies in its success in the marketplace of ideas. Risk-taking describes the willingness of entrepreneurs to commit significant resources to opportunities that are calculated to succeed. While creativity of individual contributes to the overall competitive advantage within organizational settings (Fillis & Rentscher, 2010). Ogundele and Akingbade (2012) describes the entire entrepreneurial process as involving all the function, activities and action associated with perceiving opportunities and creating organization to pursue them. However, Pinelli (2015) admit that the process perspective comprises of two sub-processes; discovery and exploitation processes. Discovery focus on the conceptual side of business development and exploitation refers to the action side. Moreover, extant research on entrepreneurship as a process focuses on the understanding of the mechanisms of each phase of the entrepreneurial process such as idea, opportunity, recognition, opportunity evaluation and opportunity exploitation.

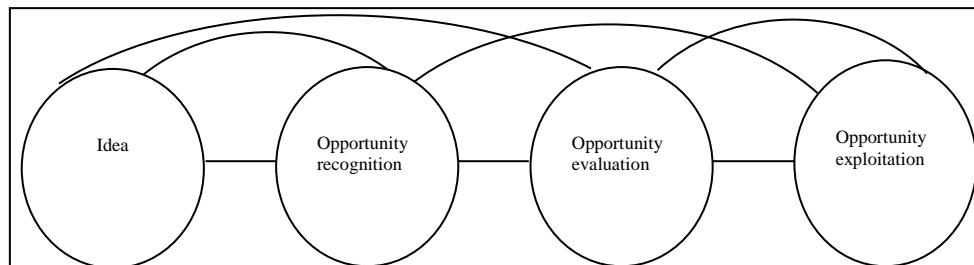


Figure 1: The Entrepreneurial Process

From figure 1, above, the illustration depicts how entrepreneurs transit through the different phases of entrepreneurial process. Entrepreneurial action may commence with the evolution of ideas as prominent within the creation perspective of opportunities or may take off with the scanning of the environment for opportunities, the identification of the opportunity to be pursued, and the evaluation of the feasibility of the new venture



(Dollinger, 2008; Pinelli, 2015). As such the desire to start a business may be externally stimulated decision or an internal search for business opportunities.

Dolinger (2008) summarizes entrepreneurial function from the definition and conceptual discussion of entrepreneurship, thus; searching for and discovering new information, translating new information into new markets techniques and goods, seeking and discovering economic opportunities, evaluating economic opportunities, harnessing the financial resources necessary for the enterprise, making time-binding arrangements, making ultimate responsibility for the management of the enterprise, being responsible for the motivational system within the firm, providing leadership for the work group and taking the risk of uncertainty. Entrepreneurship can either be developed or learnt. Wickham (2001) as cited in Adeleke (2016) maintains that the entrepreneurial spirit is sine qua non to the success of entrepreneurship. He highlights the characteristics as follows: ability to make decision, self-confidence and ability to carry through any task. courage to overcome failure, persistent in problem solving, focus goal setting and total involvement, risk bearing, initiative and personal responsibility, possession of leadership potential and traits, ability for effective organization and management and motivation to enhance achievement. Adeleke *et al.* (2008) identify the contributions of entrepreneurship development, namely: employment generation, promotion of effective use of indigenous resources, fostering innovation and change, promotion of better living standard, engaging in productive activities that contribute to income and gross domestic product.

However, Dollinger (2008) identifies push as well as pull factors that serve as impetus for entrepreneurship. The factors include but not limited to: negative displacement, that is, the marginalization of individuals or group from the core of society, being between things, for example, between student life and a career, positive push, for example, career path that offers entrepreneurial opportunities and positive pull, for example, mentors and partners encouraging the individual. Essentially, two factors are said to work drawing the individual from the conventional labour pool to entrepreneurship, namely pull and push factors (Wickham, 2001). Pull factors are factors that encourage managers to become entrepreneurs by virtue of the attractiveness of the available options. These factors include but not limited to: the financial reward of entrepreneurship, freedom to work for one's self, the freedom to pursue a personal innovation and a desire to gain the social standing achieved by entrepreneurs. Whereas, push factors comprise external "negative displacements" factor otherwise those that encourage entrepreneurship because they make conventional options less attractive. It includes the following; being unemployed in the established economy, job insecurity (being demoted, transferred or sacked), the inability to pursue a personal innovation in a conventional job, career limitations and setbacks in a conventional job, being a "misfit" in an established organization. Boland and Griffin (2015) advance that push factors are more persuasive in engineering entrepreneurial events than pull factors.



On the risk factors associated with entrepreneurship, Akhuemonkhan and Raimi (2013) describe entrepreneurial risk as the result of insecurity that exists due to the fact that the success of market penetration can never be fully determined beforehand. Hence, risk can be described as the possibility of innovation having an unwanted result. Equally, Asaju, Arorome and Anylo (2014) consider risk as the conflict situation where in the entrepreneur will find himself. Hence, all risk variables must be studied in depth with regards to the potential reward that may result. According to the scholars, a successful entrepreneur is one who capitalizes on the constructive effect of the conflict situation that originates when risk is taken. In addition, Bokhori, Alothmany and Magbool (2012) distinguish between uncertainty and risk, noting that the entrepreneur manages uncertainty by means of analyzing and evaluating risk possibilities to be encountered in the future. The duo contended that the calculated nature of managing uncertainty and risk is largely dependent on the vagaries of “chance”, “luck”, and “timing”. The projection of certain economic climates are not as predictable as in the past (for example, exchange rates, interest rates, inflation, etcetera), all making the risk evaluation process especially for the start-up entrepreneur extremely strenuous. However, Omoluabi, Akintunde and Ishiaka (2018) in their opportunity evaluation model, expound the possible risks that may occur in entrepreneurship which include; *Time Risk*:- The time implication of taking a new idea through the product development phase until it could be considered right for the market. *Investment Risk*:- This means the cost of establishing the new venture. The entrepreneur needs access to enough capital to enable the new venture survive to a reasonable extent. *Technical Risk*:- All technical aspects associated with product development process are considered with the final product having to satisfy the set technical quality standards. And *Competitive Risk*:- The possibility exists that competitors could be offering the same or comparable products in the market. The would be entrepreneur should research on the existing market advantage of the competitor as well as its existing distribution system, selling power and established relationship within the market place.

For the action factors influencing entrepreneurship; Entrepreneurial motivations are those factors that boost individuals to become successful entrepreneurs. Entrepreneurs as innovators are people who create new combinations of these factors and then present them to the market for assessment by consumers (Wickham, 2001). Besides, the entrepreneur exists in a state of tension between the actual the possible. The tension is manifested in three dimensions; the financial, the personal, and the social (Ogundele & Akingbade, 2012). Scholars of entrepreneurship according to Siyan, (2005) highlights three recurring motivations for entrepreneurship which are high desire for independence, high need for achievement, and passion for work. Tende (2013) advances further that people’s personalities and motivations will influence the likelihood that they will exploit entrepreneurial opportunities; as such some people with particular kinds of motivations will exploit opportunities that others will not. However, Weihrich, *et al.* (2010) identify ten action factors of entrepreneurs which were supported by other scholars. *Individuals who make a Significant Difference*:- Entrepreneurs transform hazy ideas into reality. They



refused to accept the status quo and believe that they can be the facts. The entrepreneur does not only possess marketing skills and interpersonal skills but also communication skills. *Creative and Innovative:-* Creativity and innovation are the universal marks of the entrepreneur. Creativity is the thinking process involved in producing an idea or a concept that is new, original, useful and satisfying to its creator or to someone else. While, innovation is the process of applying new and creative idea to a product, service or method of operations. It involves implementing the new idea generated through creativity (Tende, 2013). *Entrepreneurs Spot and Exploit Opportunities:-* Entrepreneurs have “eagle eyes” for spotting opportunities. They discover opportunities in what others see as nothing. They are able to synthesis available information and clarify patterns that escape others.

Entrepreneurs find the resources required to exploit opportunities:- Boland & Griffin (2015) believe that entrepreneurs consciously must employ resources in a disciplined way to exploit identified opportunities. Often the required resources may not be within the immediate reach of the entrepreneur but he will stop at nothing at getting the resources. They are experts at exploiting contacts and sources, begging, stealing and borrowing when necessary. *Entrepreneurs are Good Social Networks:-* Entrepreneurs know where to find resources as good networkers, who to get connected to and how to control business. *Entrepreneurs are Determined in the Face of Adversity:-* The entrepreneurs is an over comer who resolve problems under pressure. It has the ability to weather through the storms of the business world. *Customers First Mentality:-* Consciously or unconsciously, entrepreneurs put the customer first. They try as much as possible to make the customer the centre of their business. *Entrepreneurs Create Capital:-* Through creativity and innovation, resources acquisition, control of business, networking and other action factors help in the creation of financial and social capital by the Entrepreneur. Sometimes, Entrepreneurs may not have these resources but they have the ability to gather it from those who have it. *Management of Risk:-* Entrepreneurs take the risk of nurturing a business with little or no chance of surviving. Without this characteristic, business ideas will never come to limelight. However, calculated risk taking should be the emphasis, not shallow risk. *Entrepreneurs have Control of the Business:-* Entrepreneurs are usually in control of their business as they develop key indicators to alert them of danger and try to act accordingly. And depending on the kind of venture created, the entrepreneur should have technical expertise about production techniques and marketing (Igwe, 2017).

3. Methodology

This study was carried out in Abuja Municipal Area Council. The target population of the study comprised of unemployed graduates in Abuja Municipal Area Council and the study estimated 34,638 graduates in AMAC. From this estimation, samples of three Hundred and Ninety-Five (395) respondents were involved in the study using Taro Yamme formular. Forty-five (45) respondents were interviewed while questionnaire was distributed among Three Hundred and Fifty (350) respondents. Cluster sampling was employed in the selection of respondents from different locations in AMAC. The study utilized primary and secondary source of data using quantitative and qualitative method of data collection.



4. Results

Table 1. Distribution of Respondents on how the potential skills of unemployed graduates could be identified and encouraged in entrepreneurship.

Variable	Frequency	Percentages (%)
Skills acquisition and start-up capital	116	37.2
Training plus soft loans	84	27.9
Business establishment through mentorship	58	18.6
Internship scheme and stipend	51	16.3
Total	312	100

Source: Field Survey, 2018.

In Table 1 presents the finding of a survey study of graduate entrepreneurial activities in FCT Abuja, from the study it was observed that 37.2% of respondents identified skills acquisition and start-up capital, 27.9% of respondent opined training plus soft loan, 18.6% admits business establishment through mentorship. Whereas 16.3% opted for internship scheme and stipend. This implies that the skill of unemployed graduates can be identified and encouraged from skills acquisition and startup capital, training plus soft loans, then business establishment via mentorship and lastly internship scheme. Furthermore, in an interview with the informant, a head of section (HOS) information and public affairs) Abuja Municipal Area Council (AMAC). He point out that:

“AMAC administration engages in the effective training of manpower (graduates and non-graduates) in entrepreneurship” (IDI, 2018).

The trainees acquired skill acquisition in three (3) different centres in AMAC for job creation and empowerment, namely:

“Skill acquisition centres at Jiwa, Karu and Sherreti to cater for the needs of the unemployed. It is a prototype for skills acquisition (IDI, 2018).

He further added that, equipment’s such as computer, sewing machine, financial grant etc are given to graduates of entrepreneurial skill acquisition to establish their business or venture and generate income and create job.

Table 2: Distribution of respondents on factors that encouraged entrepreneurship among graduates

Variable	Frequency	Percentages (%)
Unemployment	111	35.6
Job insecurity	82	26.3
Personal innovation	64	20.5
Career limitation	55	17.6
Total	312	100

Source: Field Survey, 2018

Data in Table 2 indicated that 35.6% of the respondents identified unemployment as the factor that encouraged entrepreneurship among graduates, 26.3% suggests job insecurity,



17.6% opined career limitations, whereas 20.5% admits personal innovation as boost into entrepreneurship. This implies that negative displacements factors otherwise encouraged entrepreneurship because they make conventional options less attractive. Furthermore, a participant in the course of the interview remark that:

“There are certain factors that engineer entrepreneurial activity or event in a given locality, namely joblessness” (IDI, 2018).

Table 3: Distribution of Respondents on the Development Level of Entrepreneurship among unemployed graduates.

Level of Entrepreneurship	Frequency	Percentages (%)
Weak	141	45.2
Moderate	107	34.3
Good	64	20.5
Total	312	100

Source: Field Survey, 2018

Table 3 evaluates the level of entrepreneurship development among graduates to create jobs. 45.2% rated the input “weak”, 34.3% opted for “moderate” whereas, 20.5% of the sample evaluated “Good”. This connotes that the involvement of unemployed graduates in entrepreneurship is weak. They need to embrace entrepreneurship as a viable alternative to white collar job which is already overpopulated. In agreement with the above findings, the general consensus among most participants during interview was that, a culture of entrepreneurship through innovation and creativity should be supported by training and financial grant to encourage more unemployed graduates willing to go into entrepreneurship development.

Table 4: Response on innovative ideas, risk and funds as factors hindering entrepreneurship among graduates in AMAC.

Variable	Frequency	Percentages (%)
Strongly	75	24.0
Agreed	139	44.6
Strongly disagreed	21	6.7
Disagreed	77	24.7
Total	312	100

Source: Field Survey, 2018

The data in Table 4 shows that 68.6% of the respondents believed that innovative ideas, risk and funds are factors preventing entrepreneurship among graduates in AMAC and 31.4% opposed to this view. This implies that the unemployed graduates are deficient in entrepreneurial skills and know-how in becoming entrepreneurs instead of job seekers. This finding crystallizes the factors hindering entrepreneurship among graduates in AMAC as identified during the interview, namely; lack of funds, fear of the unknown (risk management), etc



5. Conclusion and recommendation

The study revealed that the major submission among most participants was that a culture of entrepreneurship through innovation and creativity should be supported by training and financial grant to encourage these graduates to delve into entrepreneurship. This finding corroborates the findings of Ogundele *et al.* (2012) and Omoluabi *et al.* (2018) who examined graduate participation in entrepreneurship. The finding of the study has provided a good framework for the understanding of the practice of entrepreneurship in AMAC. Statistically, the consensus among the respondents, literature assessment and document analysis in AMAC case study has demonstrated that the push and pull factors has motivated unemployed graduates to embrace entrepreneurship (Dollinger, 2008; Wickham, 2001). On the level of entrepreneurship development among unemployed graduates, it was investigated and found that the level of entrepreneurship activities among these graduates is “Weak” IQ. value of association though some respondents hold the opinion that entrepreneurship is a viable alternative to job creation. This finding is similar to the study conducted by Ali and Ali (2013) with the significant value of 0.195 to show the correlation between entrepreneurship and poverty reduction. More so, the study further revealed that lack of fund, lack of entrepreneurial skills, policy inconsistency by government and inadequate infrastructure are factors inhibiting entrepreneurship. On the other hand, innovative ideas and risk also deter many graduates from embracing entrepreneurship. Besides this finding is in Tandem with the results discovered by Igwe (2017) when he identified and examined the factors constraining the growth and survival of SMEs in Nigeria. He found that the major constraints are lack of financial support, corruption, poor and inadequate infrastructure, lack of training and experience in insufficient profits.

Based on the findings of this study, the following recommendations are made: Abuja Municipal Area Council (AMAC) and Ministry of Federal Capital Territory (MFCT) should collaborate with the bank of industry (BOI), SMEDAN and NDE to provide credit facilitates as collateral free loans to interested graduates to enhance more entrepreneurship. Government should embark on infrastructure development especially in areas where small and medium scale industries are set-up. It will reduce unit cost of production. Entrepreneurial trainings should be provided by qualified and experienced entrepreneurs or consultants so as to provide expertise knowledge and mentoring on small and medium enterprises in AMAC. Development of skill from entrepreneurial training should be encouraged. In this regard, a more comprehensive skill acquisition programmes and centers should be developed in all twelve (12) political wards in Abuja Municipal Area Council (AMAC) for easy accessibility. There should be deliberate effort to create employment opportunities via the establishment of small and medium scale industries by developing tax incentive to encourage job creation across industries and sectors.



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Assessment of Factors Causing Congestion and Nature of Cargo Clearance in Apapa Port, Lagos, Nigeria.

¹Yusuf Ndagi Baba
(babayusuf89@gmail.com)

¹Shekwobagwu Paul Galadima
(galadimapaul11@gmail.com)

¹Ibrahim Damana Abubakar
(ibrahimdamana@yahoo.com)

¹Abdulmalik Muhammad Mustapha
(fadlulmalik@gmail.com)

¹Department of Transport Management, IBB University Lapai, Niger State, Nigeria.

Abstract

Port congestion is a situation where there are obstacles in the shipyard, wharf as a result of huge shipments that needs to be offloaded thus, hindering the free flow of cargos in the port. This creates an unpleasant scenario that harms the economy, and hampers international trade. When port congestion occurs, it opens the door for more effective, efficient and technologically driven changes that include adequate planning, overhaul of existing routines and systematic modifications to be implemented. The study assessed the nature of cargo clearance and factors causing congestion in Apapa Port. The methodology for this research was based on cross-sectional survey research design, with questionnaire as the primary instrument of data collection. The simple random and convenience sampling technique was utilised in reaching the selected sample of Seventy (70) respondents from Apapa port, Lagos, Nigeria. Analysis was also carried out using descriptive statistical method. The study revealed that the nature of cargo clearance was very cumbersome in Apapa Port. Also, multiplication of security agents and demographic changes were factors causing the port congestion. The study recommended the need for the elimination of bureaucratic processes causing delays as well as a smart and seamless discharge of duties by desk officers. Also, the expansion of road networks around the port by the government at Federal and State levels was deemed necessary to encourage free flow of traffic in order to inhibit localized congestion.

Keywords: Port congestion, Cargo clearance, Factors of congestion, Vessel traffic

1. Introduction

The global trade is growing at a faster rate and as a result, vessel sizes, cargo volumes as well as traffic at the ports have increased, creating overwhelming pressure on the yards and the stakeholders involved in port operations (Global Ports and Terminal Operations Market Report, 2021). Due to this increased pressure, the internal efficiency at operational level gets affected at the ports. According to the Global Ports and Terminal Operations Market Report (2021), the European ports are smaller, but handle a large amount of cargo. However, European ports are not capable of competing on port size alone as ports with comparatively less size or capacity to handle as much traffic as large-sized ports in the Asia Pacific. In the African continent, countries like Nigeria is faced with transportation and



traffic problems particularly, traffic congestion, delays, parking space difficulties and environmental pollution which started to manifest in Lagos since the early 1980's have continued to increase at an alarming rate and have now reached an abominable stage in recent years (PwC & Panteia, 2013). Sea transportation is an effective and affordable way to transport cargo globally, it may lack timeliness but presents the advantage of transporting goods of all sizes at affordable rates. There is an increase in international trade amongst countries due to globalization, development, and technology, which is of the utmost advantage to humanity. However, it has brought with it some disadvantages which require rapid solutions, one of which is port congestion. World Bank (2012) analyzed performances from port congestion in notable African ports of Durban in South Africa, Lagos in Nigeria, Mombasa in Kenya and Port Said of the Suez Canal in Egypt and found the average cargo waiting time to be between 20 to 22 days. It concluded that more than half of the time needed to transport cargo from ports to hinterland cities in landlocked countries in sub-Saharan Africa is wasted because of the time cargoes spend in ports.

Researches have shown that the leading causes of port congestion are improper documentation procedures, port management and operation, ship traffic inputs, port structure, strategy and government relations (Bolat, Kayisoglu, Gunes, Kizilay, & Ozsogut, 2020). Ports are the gateway by which there is exchange of commodities from surplus regions to the deficit regions. Ports play a key role in the maritime nations like Nigeria especially in terms of economy and development as nearly 75% of the trade between Nigeria and the rest of the world is handled in ports (Oyatoye, Adebisi & Okoye, 2011). Over the years, the Nigeria's ports system, especially as reflected at Apapa port 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 maritime industry. Port congestion harms the economy, and hampers international trade. It presents a situation where ships are prevented from berthing due to a backlog of ships at port caused by many delays experienced at the ports (Xchange, 2020). When port congestion occurs, it opens the door for more effective, efficient and technologically driven changes, adequate planning, an overhaul of existing systems and making room for more modern and effective modifications to be implemented (Oyatoye *et al.*, 2011).

Several factors contribute to the traffic menace into and out of Apapa port complex. These include the lack of holding bays for empty containers, which is an unprofessional way of doing shipping business, unorganized parks by container trucks before proceeding to the port for loading and off-loading, effect of oil farms situated along this corridor, the narrow nature of the road especially in the trucking of heavy duty shipments, lack of alternative transport mode to road in this area which could have alleviated the current situation for better. Many shipping companies in Apapa area operate their businesses without having personal stemming port/holding bays for export shipments. Numerous research studies have indicated that port congestion is linked to port pricing problems (Gidado, 2015).



Some factors cause congestion, inclusive but not limited to; inadequate port and vessel facilities, inefficient port organization and administration, restraints resulting from stringent and unfavourable policies, inadequate transportation facilities, poor road network, and reliance on one major port. These factors hinder the efficient and effective running of the ports (Saeed & Larsen, 2016). There lies the problem that port congestion in berths results in delays, fines, gridlocks, accidents, queuing and extra costs. There is also an issue of pricing and other fees associated with the ports. It is in view of the forgoing background that this study seeks to assess the nature of cargo clearance and factors causing congestion in Apapa port, Lagos. To achieve this objective, the structure of this paper is classified into five (5) sections. Section one (1) looks at the introduction, section two (2) literature review, section three (3) materials and method, section four (4) results and discussions and section five (5) conclusion and recommendations.

2. Literature Review

Port congestion is a situation where there are obstacles in a shipyard, wharf as a result of huge port of shipments that needs to be offloaded thereby hindering the free flow of cargos in the port. Two important terms which cannot be ignored when conceptualizing congestion in a port are Terminals and Gateways (Rodrigue, 2020). The port area which harbours ships so as to offload its content is referred to as terminals. Various instruments are used in the port area such as cranes, lighters, forklifts etc. On the other hand, Gateways are channels linking shipment to their destinations either through the use of trains, cars or trucks. A seaport is always very important to the maritime authority as it helps generate income for the country as well as create employment to citizens.

When relating the port with trade, it represents the combination of a gateway and a terminal. It makes ship harbour connections like controlling, digging up, provision of berths and navigational channels care, interface of ship-port when stocking and unpacking cargo possible. (Ndikom, 2008, cited in Ndikom & Emeghara, 2012). As a maritime country, Nigeria has an extensive foreign trade base therefore most commodities are often imported/transported through the sea ports. Thus, one relevant mode of transportation that country transact foreign trade is by ocean shipping (Ndikom, 2008, cited in Ndikom & Emeghara, 2012). Several industries including the oil and gas industry rely on shipping to meet their transportation needs. They maritime industry is thus very important to the Nigerian government due to the economic role which it plays this therefore calls for improvement of the Nigerian port (Ndikom, 2008, cited in Ndikom & Emeghara, 2012).

Queuing Theory on Port Congestion

The queuing theory originated in the early 1900s by a Danish engineer, statistician and mathematician called Agner Krarup Erlang. The queuing theory mathematically examines the way congestion, and delays occur. It analyses every part of waiting on a queue, the number of servers and system places, number of customers and customers appearing in different forms, like people, cars and so on. Queuing theory covers a wide range of applications that are beneficial to businesses, from effective customer care, elimination of



delays, and efficient refund structure and fast logistics and so on. Queuing theory is also concerned with delivering the best possible service at the best and most affordable price (Kenton, 2020). This theory has two components: first, it involves someone or something requesting a service, and second, it involves someone or something delivering a service. The ports, on the other hand, receive these items, reload them onto trucks or container trucks, buses, cars and so on while collecting various fees to ensure that these items get to their final destination. The onus lies on the ports to deliver efficient and effective handing over for these items to the businesses or individuals who have made these purchases (Oyatoye, Adebisi & Okoye, 2011). Queuing theory has also been applied to the problem of port congestion highlighted by Oyatoye *et al.* (2011) who opined that it is a standardized method to port outline and management in order to have various movement of shipments, cargoes, and international merchandises under control. Moreover, this theoretical standard leverages on the ideals of “First come, first served” in the process of optimally conducting port supervision of merchandize in the berth.

Several factors exist as observed by this study which gives rise to congestion in Apapa Port, they include: *Structural influences*: This includes both physical and operational influences that affects the ports activities which tend towards congestion especially when supply is high. Also, at times there are scenarios where ships are unable to berth or cargoes are left at the port for days by shippers (Oyetayo, 2011; Nze & Onyemechi, 2018). Delays by port officials also bring about more expenditure to importers as well as final consumers making commodity price constantly be on the rise. Inefficiency and lack of control of port workers has brought a rise in tribalism, and corruption thus increasing port congestion. *Physical environment*: This covers the visible surrounding of the port. When the immediate surrounding of the sea port has an unfavourable weather condition, malfunctioning port equipment, high influx of imported and exported goods, etc. these are examples of physical environmental factors causing more congestion at the terminus of the port. *Organizational factors*: This entails the challenges in the implementation of policies by the government on port decongestion due to inadequate definition of policies, over-ambitious policies, lack of policy continuity and encouragement in the utilization of other ports in other parts of the country, lack of clear definition in responsibility and coordination, inadequate governmental sensitivities that lead to industrial strike action which usually leads to a stall in the work processes at the seaport and corrupt practices like issues of theft, misappropriation of government funds which is substantively dangerous to the development of the sector and invariably, to the investment from foreigners/international traders. *Demographic changes*: This entails the inadequacy of some seaports to measure the rapid modernization trends in the developmental process of society towards an increasingly integrated global economy to achieve all-around capacity and subsequently, human capital problems. This leads to the accumulation of shipments, which should necessitate broadening the areas around the seaport to relieve port congestion without unnecessary amplifications (Hellenic Shipping News, 2021).



Empirical Review

Casmier, *et al.* (2017) in their study on the factorial analysis of delay causative factors in Nigerian ports opined that, among factors influencing congestion in Nigerian ports, lack of storage facilities was top on the list, showing a factor loading of 0.708 and a percentage rate of 71%. The factor loading test also showed the decision associated with administrative bottle neck as the next most important, followed by organizational classification. The two had a factor loading of 0.707 and 0.611 respectively. Nze and Onyemechi, (2018) in their study on port congestion determinants and impacts on logistics and supply chain network of five African ports (including Lagos port) revealed that the bane of congestion in African ports is entirely due to poor planning, regulation, capacity, efficiency or a combination of these. Ibeawuchi and Chinedum (2018) presented a paper on port congestion determinants and impacts on logistics and supply chain network of five African ports, in which the authors used a ranking concept to evaluate the variations in ship turnaround time to identify the factors that cause port congestion in African ports, according to their results port congestion is caused by a lack of planning, regulation, capacity and efficiency. According to an article written by Lam *et al.* (2015) on disruption risks and mitigation strategies an analysis of Asian ports, the purpose of this paper was to analyse and categorize the disruptions that have occurred in Asian ports, the result of this research identified labour strikes and natural disasters as the leading causes to port disruption. Loh, *et al.* (2017) in an article on a fuzzy comprehensive evaluation of port centric supply chain disruption threats, the authors evaluated and identified port centric supply chain disruption threats, the result of their research showed that the major contribution to the disruption at the port pertains to planning and infrastructure.

3. Methodology

The methodology for this research was based on the research design. The cross sectional survey research design, which involves the use of questionnaire, was adopted in this study to find out the existing situation at Apapa port using simple random and convenience sampling technique. A total of Seventy (70) respondents were drawn and sampled from Apapa port, Lagos, Nigeria by means of convenience sampling. The design was chosen because it provides appropriate methodology for opinion and perception of human behaviour. The test-retest method: is a method of establishing a correlation between the quality of (primary) data obtained by the researcher, which is determined by comparing the results of the same determining method administered to the same participants on two (2) different occasions. By deliberately, comparing the analysis results over time, it allows the researcher to see how stable and suitable the investigation is within a time frame.

Prior to the distribution of the questionnaires, the email of staff of the Apapa port were sought and gotten by the researcher from the Port HR department and seventy-six (76) Google form questionnaires were administered through the collected email. A significant proportion, (73) of the Google form-based questionnaires dispatched via email were submitted, thoroughly filled out but three (3) of the submitted forms were not completely filled and were expunged from the investigation. This made the total valid submitted



questionnaires be Seventy (70), signifying a 92.1% completion rate and deemed very reasonable enough for further analysis. The seventy (70) questionnaires were later analysed in the Statistical Package for Social Science (SPSS) IBM 20 software. Before going ahead to carry out the analysis, two (2) tests were conducted on the collected data and they included; reliability and normality tests.

The purpose of conducting reliability test was to check for error in interpretation of the instruments as well as for respondents' bias in the course of responding to the questions, meanwhile, normality test was conducted to ascertain the distribution of the data collected and thereby establishing the appropriate method of analysing the data. The result of the reliability displayed a strong Cronbach alpha coefficient of 0.809 (see table 1), an indication that the responses to the instruments of the questionnaire were to a great extent, devoid of the error in interpretation and devoid of bias. Meanwhile, result of the normality showed that the data had a normal distribution. Descriptive statistical analysis was adopted for the analysis of the collected data.

4. Results

Table 1: SPSS Result of the Reliability Test

Cronbach's Alpha	N of Items
.809	12

Table 2: Socio-demographic Characteristics.

Variables	Frequency	Percentage
<i>Gender</i>		
Male	62	88.6
Female	8	11.4
<i>Age group (years)</i>		
Less than 25	8	11.4
25 – 34	36	51.4
35 – 44	14	20.0
45 – 54	8	11.4
55 above	4	5.7
<i>Type of organization</i>		
Terminal operator	12	17.1
Shipping company	18	25.7
Hauler	14	20.0
Freight forwarder	8	11.4
Customs	4	5.7
Stevedore	14	20.0
Other	0	0.0
<i>Role in the organization</i>		
Admin.	4	5.7
Technical	38	54.3
Security personnel	16	22.9
Other	12	17.1

Source: Authors' online survey, 2022.



Table 2 above reveals the socio-demographic characteristics of respondents. From the analysis it is seen that males were 62 (88.6%) while females were 8 (11.4%) indicating that majority of respondents are male. The age group reveals that respondents who are less than 25 years are 8(11.4%), 25-34 years were 36 (51.45), 35-44 were 14 (20.0%), 45-54 years were 8 (11.4%) and 55 above were 4 (5.7%). This is an indication that majority of respondents are aged 25-34 years of age.

In examining the type of organization which respondents belong to, terminal operators had 12 (7.1%), shipping companies were 18 (25.7%), haulers were 14 (20.0%), freight forwarders were 8 (11.4%), customs were 4 (5.7%), stevedores were 14 (20.0%) and others were zero. This indicates that respondents working with shipping company are the majority. The role which respondent play in their various organization reveals that 4 (5.7%) were admin, 38 (54.3%) were technical, 16 (22.9%) were security personnel and others were 12 (17%). This indicates that majority of respondents were technical personnel.

Table 3: Factors Causing Port Congestion.

Factors	SD	D	N	A	SA
Ranking	1	2	3	4	5
Legal Instrument	9(12.9)	13(18.6)	6(8.6)	16(22.9)	26(37.1)
Bureaucracy/Documentation	6(8.6)	12(17.1)	4(5.7)	20(28.6)	28(40.0)
Multiplication of security agents	5(7.1)	11(15.7)	6(8.6)	22(31.4)	26(37.1)
Inadequate space and infrastructure	17(24.3)	18(25.7)	2(2.9)	16(22.9)	17(24.3)
Lack of rail transportation	8(11.4)	11(15.7)	6(8.6)	14(20.0)	31(44.3)
Malpractices/Corruption	12(17.1)	19(27.1)	0(0.0)	16(22.9)	23(32.9)
Demographic Changes	2(2.9)	8(11.4)	4(5.7)	23(32.9)	33(47.1)

*Note: SA is Strongly Agree, A is Agree, D is Disagree, SD is strongly Disagree, and N is Neutral.
 Source: Authors' online survey, 2022.*

Table 3 reveals factors causing port congestion. 9 (12.9%) strongly agreed that Legal instrument causes port congestion, 13 (18.6%) disagreed, 6 (8.6%) were neutral, 16 (22.9%) agreed and 26 (37.1%) strongly agreed. This indicates that most respondents strongly agreed that legal instrument cause port congestion. Bureaucracy/ documentation; 6 (8.6%) strongly disagreed, 12 (17%) disagreed, 4(5.7%) were neutral, 20(28.6%) agreed and 28(40.0%) strongly agreed indicating that most respondents strongly agreed that bureaucracy/documentation is a factor causing port congestion.

Multiplication of security agents; 5(7.1%) strongly agreed, 11 (15.7%) disagreed, 6(8.6%) were neutral, 22(31.4%) agreed and 26(37.1%) strongly agreed indicating that majority of respondents strongly agreed that multiplication of security agents is a factor causing port congestion. Inadequate space and infrastructure; 17(24.3%) strongly agreed, 18 (25.7%) disagreed, 6(2.9%) were neutral, 16(22.9%) agreed and 17(24.3%) strongly agreed indicating that majority of respondents strongly agreed that inadequate space and infrastructure is a factor causing port congestion.

Lack of rail transportation; 8(11.4%) strongly agreed, 11 (15.7%) disagreed, 6(8.6%) were neutral, 14(20.0%) agreed and 31(44.3%) strongly agreed indicating that majority of



respondents strongly agreed that Lack of rail transportation is a factor causing port congestion. Malpractices/Corruption; 12(17.1%) strongly agreed, 19(27.1%) disagreed, 0(0.0%) were neutral, 16(22.9%) agreed and 23(32.9%) strongly agreed indicating that majority of respondents strongly agreed that Malpractices/Corruption is a factor causing port congestion.

Demographic Changes; 2(2.9%) strongly agreed, 8 (11.4%) disagreed, 4(5.7%) were neutral, 23(32.9%) agreed and 44(47.1%) strongly agreed indicating that majority of respondents strongly agreed that Demographic Changes is a factor causing port congestion.

Table 4: Nature of Cargo Clearance Process

Nature	Frequency	Percentage
Very cumbersome	34	48.6
Cumbersome	24	34.3
Not Cumbersome	12	17.1
Total	70	100.0

Source: Authors' online survey, 2022.

Table 4 shows the nature of cargo clearance process; very cumbersome 34 (48.6%), 24 (34.3%) cumbersome and 12(17.1%) not cumbersome. This indicate that the nature of cargo clearance process is mostly very cumbersome.

Table 5: Descriptive Statistical Analysis of the Factors Causing Port Congestion

Factors	Mean	Median/cut-off	Minimum	Maximum
Legal Instrument	3.52	4.00	1.00	5.00
Bureaucracy/Documentation	3.74	4.00	1.00	5.00
Multiplication of security agents	3.75	4.00	1.00	5.00
Inadequate space and infrastructure	2.97	2.50	1.00	5.00
Lack of rail transportation	3.70	4.00	1.00	5.00
Malpractices/Corruption	3.27	4.00	1.00	5.00
Demographic Changes	4.10	4.00	1.00	5.00

Source: Authors' online survey, 2022.

The decision rule is: If median is higher than mean, this is a factor, if median is less than mean, it is not a factor.

Table 5 shows the descriptive statistical analysis of factor causing port congestion. For legal instrument, a mean value of 3.52 was derived median value of 4.00 which is greater than the mean, therefore this is not a factor. Bureaucracy/documentation had a mean value of 3.74 and a median value of 4.00 which is higher than the mean. Thus, this is not a factor. For multiplication of security agents, a mean value of 3.75 and median value of 4.00 which is greater than the mean that was observed. Thus, this is not a factor. For inadequate space and infrastructure, a mean value of 2.97 which is greater than the median value of 2.50 indicating that this is a factor causing port congestion.

Lack of rail transportation had a mean value of 3.70 which is less than the median value of 4.00 indicating that this is not a factor. Malpractices/corruption had a mean value of 3.27



which is less than the median value of 4.00. Indicating that this is not a factor. Demographic changes had a mean value of 4.10 which is greater than the median value of 4.00. Thus, demographic change is a factor causing port congestion. Therefore, inadequate space and infrastructure, and demographic changes are the key factors causing congestion in Apapa port.

Discussion of Findings.

The study discovered that cargo clearance process is very cumbersome. The study also discovered that inadequate space and infrastructure, and demographic changes are factors causing congestion in Apapa port. This study disagrees with the findings of Nze and Onyemечи, (2018) who discovered that inadequate planning, capacity, regulation, and efficiency are factors which causes congestion in the Lagos port. The number of containers arriving at the Apapa wharf daily are large and due to the uniqueness of each item as well as the value of each products, the port attendants take their time to ensure that due process has been followed, for example, the type of contract signed between the seller and buyer, the taxes to be paid must be paid etc. Sometimes, cargo clearance may take days or even weeks to get done making users of the port experience so much stress going back and forth to clear their goods. This turns out to be very cumbersome for users. The logistics ring of the Apapa port can only handle 2,400 trucks daily, whereas 7,000 trucks need to pass through every day (Hellenic Shipping News, 2021). These trucks can sometime go through various security processes before they eventually get moved into the main city. For every stoppage for security checks, time is spent thus causing delays. Also, going by the queuing theory which leverages on the ideals of “First come, first served” which is intended to bring about orderliness and due process in the conduction of port supervision of merchandize, there is a sense of disorderliness, lawlessness and corruption among many Nigerian drivers and port officials which often leads to anarchy and unwarranted delays in a bid to “hasten” the clearance processes through such sharp practices, thereby subjecting most individual to this unpleasant process of poor service delivery and limited movement around the port which culminates in making cargo clearance process very cumbersome. Demographic change causes port congestion when the population of people living within the port environment increases drastically more than it was at the inception of the port services. More vehicles begin to ply the port route more regularly comprising residents, privates and commercials going to clear their imported goods. Looking at Nigeria’s growing population as well as the density of population living in Lagos, it can easily be deduced that the high population associated with these geographic regions will definitely affect the free flow of traffic thus leading to congestion in the port.

5. Conclusion and Recommendations

Conclusively, it can be said that the nature of cargo clearance is very cumbersome in Apapa port, Lagos. Also, inadequate space and infrastructure, and demographic changes are factors causing port congestion. Port congestion can be reduced if necessary steps are taken to reduce it.



It is therefore, recommended that the processes involved in clearing cargo be reduced and only the most important steps should be taken when clearing cargos i.e. bureaucratic processes that brings about delay must be eliminated and every staff who needs to sign one document or the other needs to always be available to discharge their duties. Although security agents are important within the port, however activities of security agents should be conducted swiftly to avoid unnecessary delays.

Also, the deployment of technology is essential for faster cargo clearance. This is very important to eliminate the need for keeping goods longer than necessary. Demographic change causes port congestion when the population of people living within the port environment increases drastically more than it was at the inception of the port services. More vehicles begin to ply the port route more regularly comprising residents, privates and commercials going to clear their imported goods. Hence, the need for the government to expand the road network in and around the port to encourage free flow of traffic.

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Artificial Intelligence and Organizational Business Productivity: A Qualitative Study

¹Ikechukwu Micheal Onyeoghani
(onyeoghanimichael@gmail.com)

²Isioma Fidelia Okohmire
(filchuks@gmail.com)

¹Ichale Meshach
(meshachichale@gmail.com)

¹Dept of Business Administration & Management, Delta State Polytechnic Ogwashi-Uku

²Department of Public Administration, Delta State Polytechnic Ogwashi-Uku.

Abstract

This study is focused on Artificial intelligence and productivity in the workplace. The main objective of this research work is to unveil the significance of Artificial Intelligence in aiding business productivity and it will serve as an eye opener to other ignorant business organizations that are yet to tune into the use of this human-like machine. The qualitative methodology was employed to this work and this involved an online interview of over ten different staff members and one among them representing each of these companies that make use of this technology in their day to day work activities. Information obtained were analyzed and displayed in a narrative way for easy comprehension. The findings from the interviewees showed greater level of productivity in those business firms where the services of this software was employed. It also revealed that the software works accurately without getting tired and that it can perform routine functions adding that it is far better than human efforts. The paper recommends an outright application and enthronement of the system in every business outfit in the world for greater level of success.

Keywords: Artificial intelligence, Productivity, Effectiveness, Performance, Information

1. Introduction

Artificial intelligence is the science and the art of creating technology in the form of robots that performs tasks and think like humans. It is the process of designing a technology that enables a system to function in an intelligent form without being influenced by human being. To the surprise of many, it can perform every task in all fields of human endeavors. Information technology has now become so crucial in many professional business activities. Through the use of this software, productivity has dramatically increased in all firms such as Amazon Web Service, Cloudera, Nvidia, Google, Microsoft and many others who have blossomed in productivity in recent times. Organizational decisions, advertising, product packaging, automations, data processing, distribution of goods and services, machine learning, creating businesses. Algorithm, problem interpretation to mention but a few have been made even more perfect (Sapna, *et al.*, 2019). The digital transformation has driven hyper - connected organization.



Thieu and Uyem (2020) carried out a research work on the benefits and applications of this software, they devised the empirical methodology type of research and from their findings, it was discovered that this new application has brought about tremendous productivity compared to human efforts. They concluded in their discoveries that this new development has the efficacy to drive up business organizations towards effective productivity levels. They opined that the application has arrived with notable and unequal results in organizational productivity. In fact, the connection between information technology and that this software is like one that was made in Heaven. This new discovery is an offshoot of information technology. This technology has found her way in almost all the sectors of business organizations and with significant success. What motivated the study in working on this research area is that it is a device that can replace human efforts in the work place. It is a new area of discovery and most research works are going that way. It also pleases he study so much to find out that this system carries out work effectively more than the efforts of human beings. The system helps to personalize the process of marketing and sales by organizing marketing research, increased customers experience. Through the act of data processing, the system carries out product packaging, effective price system, and good means of product distributions. It aids decisions making and other managerial activities in the firm. These are aided through machine learning activities, data processing, the use of chat boards and problem solving algorithms. Thus, information technology has given birth to the emergence of this wonderful software. It ensures effective advertising of the products and good quality manufacturing. Sapna *et. al.* (2019) emphasis that the system increase the efficiency of operations in firms, quality maintenance in operations and optimize and improve customer experience, improve products and services with new products and services with new features as well as item recommended process, and supply chain operations.

However this system enhances the recruitment of effective staff through the aid of data, It maximizes the production of good quality products knowing fully well the needs of the customers. The software ensures better decisions making and good market forecasting by obtaining information concerning the market trends and situations through market Interdependence and research. The machine handles repetitive responsibilities and timely operations. It helps save time and money by minimizing operational costs of running the entire firm. The software assists in ensuring good product innovations and quality procurement of materials. In fact the use of the software in modern day business is a real deal as it enhances productivity with ease as quality control is assured. The main objective of this work is that it will be an eye opener to many ignorant business organizations that are yet to venture into the services of this wonderful device. The work piece will disclose how the services provided by the software will drastically enhance productivity. It's roles in personalizing and optimizing the marketing and sales activities, and it's assistance in recruitment and selection process and more importantly management process. This work piece will express the usefulness of the application to business successes. The paper will serve as a mirror as it will explain its usefulness in effective manufacturing of good quality



products, better decisions making, and handling repetitive responsibilities, carrying out business forecasting, new product innovations and maintenance of good quality control. The work will show how the application can do all these through the aid of machine learning, deep learning, the use of chatbots, digital assistants, data processing, neural networks. To unveil the usefulness of this software as stated above so that the ignorant business firms will be lured to venturing into it immediately is the main objective of this study.

2. Literature Review

Based on the illustrious work of Sapna *et.al.* (2019), an extensive work was carried out on the relevance of this computer device in replacing human efforts in the work place and at the end of the work discoveries, the study states that "we are today in the industrial revolution in which Artificial Intelligence has arrived with a bang. It further emphasized in the findings that the success which accompanies the application is actually amazing. We are in a revolutionalized world of crazy technological advancement as echoed! As important as specific application of the machine may be, we argue that the more important economic effects of the software, machine learning and associated new technologies stem from the fact that they embody the characteristics of general purpose technologies. Erick (2017) after doing a great work on the usefulness of this all important technology, emphasized that it carries out its efficient functions through the aid of machine learning in optimizing productivity. Interestingly, the software application can be applied in every field of human endeavors. Artificial intelligence is the best example of science and technology aiding the organizational productivity in a non-intrusive way. (Sapna *et.al.*, 2018). The application brings about increase in sales and marketing, better decisions making, better means of production and innovations. Through the aid of deep learning, digital virtual assistant and data processing, the software can perform repetitive responsibilities and ensures better quality control. It increases the rate of manufacturing of good quality products. It drives organizational business success. Raj *et.al.* (2019) in their diligent work on this device adopted the empirical method and he made some interesting findings and one of them is that Artificial Intelligence influences the way businesses are done today and it brings about general security of the firm, It eliminates fraud, financial theft, data leakage and general security of the firm the study concluded. Cyber security has become a major concern in the digital era (Bhatele *et. al.*, 2019).

Furthermore, the application has brought about new ways of handling tasks productively. It has brought new ways of business forecasting by doing it accurately, timely operations and effective recruitment and selection process. It ensures adequate customers experience and maximum utility. It solves complex business problems through iterative process algorithms. The system brings into existence good customer support and relationship management between the buyers and the firm. This it can do through the aid of chat bots in its operations. We are now in a modern era of Industrial revolution. Artificial Intelligence has come to improve many global economies through a dramatic improvements in Economic growth of nations (Oscar, 2021).



The software accelerates marketing and sales in the most productive way. It provides the best customer experience and maximum utility. Priyia (2021) Artificial Intelligence in marketing is now one of the most prominent examples. It is helping marketers predict what their customers want and as a key contributor to now seamless customers experience "Through the aid of machine learning, predictive models, the application can market products with ease to the desired customers. It can send emails and communicates with individual buyers through social media posts and advertise those products to the end users. The system can carry out predictive Analysis through deep learning technology. It can forecast market trends and fresh sales opportunities. It guides sales activities by using predictive sale models to analyze future sales and current sales. It can study the behavior and demands of individual customers by going through their respective data and studying their needs and aspirations. It makes use of statistical algorithms to predict the markets and sales of products. Sales analytics, business automations with the aid of data gathering and processing. It can predict market future gains or profits. With all this increased productivity is assured.

The software is also very important in manufacturing of goods and services. It performs great quality tasks in production of goods. It predicts perfectly about product innovations. Good quality goods are produced excellently which will be the pride of the buyers. The application makes use of the best raw materials in their right mix. Good products are manufactured through good measures such as good quality management and safety precautions. The system monitors all the machines used for production so that they don't breakdown. It forecasts accurate delivery times so as to meet deadlines. Before production machinery breaks down, it will detect and fix it. All forms of inefficiencies are completely eliminated, Kim (2021) came up with his findings that Artificial intelligence has become increasingly pervasive in the context of industrial manufacturing and that it has been considered the forth industrial revolution" It overhauls all manufacturing activities by ensuring a one hundred percent increase in productivity. He concluded that this device has the potential for good quality manufacturing of products and maximizes productivity.

The system helps in making quick and good decisions in every department of the business organization. One major advantage is that it makes accurate decisions. Those good quality decisions are made through the aid of machine learning, deep learning, digits software assistants and the aid given by the stored data. It generates new quality ideas which moves the business organization forward dramatically. The system brings about good insights with the aid of real time interactive dashboards and from there consistent good decisions are made accurately. Good management decisions are made and this ensures good quality control and enhanced productivity. Machine learning enables the software to make good and fast decisions which concerns all the units in the firm. Hitches and headaches in decisions making on the part of the management are eliminated by this software as ideas are generated quickly and correctly. Gualdi and Cordella (2020) were also exceptional in their work on this application and they arrived with a result and their finding that effective decisions which results in an enhanced productivity of goods and services are made by the



software at a faster rate. It ensures adequate productivity they said. Recently a new set of digital tools commonly known as Artificial intelligence has come to aid decisions making and other managerial activities in the organizations (Ernst 2022).

Without mincing words, the application provides the best security network to the business organization. It recognizes any external threat and internal threat ahead of time even before they occur. This software carries out security checks on the entire organisation perfectly Oscar, (2021). The system studies patterns of security movements through the aid of machine learning, deep learning, security automations and data to provide adequate security for the entire organization. It tracks down historic events by checking past events and provide effective security for the firm. Through the aid of deep learning and CCTV cameras, the system is able to safeguard all the parts of the business organization. Cyber security has become a major concern in the digital era (Bhatele, 2019).

The software assists in performing routine repetitive responsibilities in all areas of the firm. In the area of recruitment of managers and other employees the application can trace the details of all the applicants by short listing the best possible names that suits the job. Artificial intelligence is used for various business processes including hiring of employees and managers (Mirji, 2021). This it can do with the aid of the chatbots and the virtual digital assistants built into the software's for enhanced productivity. Good and harmonious relationship is assured between the customers and the business firm through this discovery. It helps to minimize the cost of business operations by saving money and overhead costs for the firm. The system carries out market forecasting by predicting future trends accurately. It helps to procure quality materials and ensures good quality control. The process of machine learning, deep learning, data processing, chatbots, automations and iterative algorithms in problem solving helps the application carries out its tasks in a more effective way which brings about increased productivity.

3. Methodology

This research piece was carried out by the use of the qualitative method of research. About 10 Artificial Intelligence sites were consulted through an online interviews of at least a staff from each of the company and some of them were the IBM, AWS (Amazon Web Service), Cloudera, Nvidia, Conversica, Alibaba cloud, Anduril, Microsoft, Google and Amazon. The participants were chosen through the use of the purposive method of sampling. This sampling method was used due to the critical importance and subject the study was based. Therefore 10 persons were randomly selected. Interviews were carried out in the form of questions and answers between the interviewer and the interviewees regarding artificial intelligence and productivity in their various firms. Each of these people chosen were interviewed for a time duration of only 15 minutes. It was also carried out based on the convenient time of each interviewee concerned and the question asked the interviewee were actually based on the research objectives. The questions and answers were done in English language. Information obtained were displayed in a narrative manner.



This was followed by the analysis of the data obtained and hence this gave rise to the findings and results in alignment with the aims of the study.

4. Findings

This particular area displays and interprets the information (responses) obtained from those ten various staff members of the firms under this study. The data gotten were shown in a narrative form and it was also hinged on the study aims and research questions. The interviews the researcher had with those interviewees were shown in a narrative way for easy understanding of the findings on the use of this software, it is compared to human efforts, the productivity levels obtained and the general progress of their firms as regards the application. Thus Mr Packer Smith, a staff of Amazon Web Service, was asked on the functionality of Artificial Intelligence on productivity, and in response he said:

The software is so amazing .it can carry out different kinds of functions at an amazing speed. In fact it is a sure bet on productivity

The answer given by Mr. Packer Smith aligns with that of Thieu and Uyem (2020) in which they emphasized in their findings that this technology works more perfectly than human efforts and at a greater speed. Thieu and Uyem (2000) concluded in their research work that this application is the current answer to enhanced productivity in the workplace. A 44 years old Tim scotts, an interviewee from Cloudera company based in the United states said:

This software works at an amazing speed and with better accuracy when compared to human efforts .It carries out different functions in the workplace perfectly.

This response from Tim scotts is in conformity with the findings made by Sapna *et al.* (2019) that this technology carries out routine functions and at an amazing speed thereby bringing about an increase in productivity in the workplace. A 52 Years Interviewee From Microsoft Company in the United States explained:

The use of Robots have become the current source of better productivity. But the application works on programmed data with the aid of machine learning and other enabled solutions .But my fears are that in the nearest future, it will totally replace human efforts in the business organizations.

This revelation is in accordance with the findings of Gualdi and Cordella (2021) in their research in which they opined that the application works with the aid of a programmed data, machine learning and other enabled solutions. A 60 years old Patman Robbins, an interviewee from Google company replied the interviewer this way:

The use of Roborts is applicable currently in almost all areas of human endeavors. It is the source of perfect increase in output in every



venture. But it is a programmed software. It works on the basis of data programming and delivers accurately.

This finding tallies with the work findings of Ernst (2022) that the application is applicable to every area of human and business activities in all organizations.

The same response is gotten from six other interviewees who are also staff members in the other firms such as Nivida, Anduril, Alibaba Cloud, Conversica and IBM .The answers gotten from this other six interviewees is in line with the findings made by Raj *et.al.* (2019), in which they discovered that this technology can help perform many range of functions including managerial decisions making, quality innovations, maintenance and many others. This six other interviewees emphasized that the robots can perform more effectively than human efforts based on the evidence recorded in their various firms.

The findings that Artificial Intelligence increases productivity, and it is accurate and faster than human efforts. The software works without getting tired hence a larger output of results in the workplace, and it helps to personally accelerate the marketing processes. From the findings carried out by Giacomo *et.al.* (2021), Artificial intelligence has brought about a significant increase in productivity. It has catapulted many business organizations into ultimate success. The software helps in quick decision making. From the findings made by Gualdi and Cordella (2021), this application helps in quality decision making for management of an organization and it performs other routine functions better than human efforts. It accelerates the act of productions and innovations. The usefulness of the application can be sensitized globally to increase awareness so that every business firm could tune in to the use of the service. It was found that productivity was drastically enhanced through the use of the application from the discoveries made from the sites and other works consulted. Finally it was found that the software can perform many business activities without getting tired hence the need for its service to be employed to enhance firm's performance.

5. Conclusion and Recommendations

In a nutshell, the service provided by this wonderful device should be embraced by all organizations. It comes with total efficiency So many firms have come to understand the importance and the need to venture into it. It drives success and opens the doors to unequalled success. It goes with many advantages in every sector where it is applied.

The importance of this discovery have become so clear to firms. It has become the real deal. This research work have arrived with better recommendations. The work piece has recommended that the enthronement of this services in all business firms world-wide: The firms that have ventured into the use of the software can testify boldly of its immense benefits. Therefore this research piece is hereby advocating that the application should be introduced to all business firms for an accelerated service and productivity. It should be made readily available and within reach of all. It should come with low cost so that many firms can have access to it. Once it is within the reach of many firms world-wide, it will



help build the world's economy. It will help improve productivity and profitability as it save money and cost of running the company. There should be a sensitization and orientation about this technology in the form of conferences and workshops .This will enable the business owners to have the awareness.

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