



**UNIVERSITI PUTRA MALAYSIA**

***DETERMINANTS OF INCOME INEQUALITY AND THEIR IMPACT ON  
VIOLENT CRIME IN NIGERIA***

**GARBA MOHAMMED GUZA**

**SPE 2020 37**



**DETERMINANTS OF INCOME INEQUALITY AND THEIR IMPACT ON  
VIOLENT CRIME IN NIGERIA**

By

**GARBA MOHAMMED GUZA**

**Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia,  
in Fulfilment of the Requirements for the Degree of Master of Science**

**August 2020**

## **COPYRIGHT**

All material contained within the thesis, including without limitation text, logos, icons, photographs, and all other artwork, is copyright material of Universiti Putra Malaysia unless otherwise stated. Use may be made of any material contained within the thesis for non-commercial purposes from the copyright holder. Commercial use of material may only be made with the express, prior, written permission of Universiti Putra Malaysia.

Copyright © Universiti Putra Malaysia



## **DEDICATION**

This study is dedicated to my Late father ALHAJI MUHAMMAD GUZA (Waziri of Potiskum), Yobe State, Nigeria



Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment of the requirement for the degree of Master of Science

**DETERMINANTS OF INCOME INEQUALITY AND THEIR IMPACT ON  
VIOLENT CRIME IN NIGERIA**

By

**GARBA MOHAMMED GUZA**

**August 2020**

**Chairman : Suryati Ishak, PhD**  
**Faculty : School of Business and Economics**

The main objective of this thesis is to investigate the determinants of income inequality and establish the empirical relationship between income inequality and violent crime in Nigeria by using a time series dataset for the period 1990 to 2019. The study examines the long-run relationship between the determinants of income inequality and violent crime using socio-economic factors, and governance indicators such as Real GDP per capita, financial development unemployment rate, education level, the rule of law and political stability. The study utilised the Autoregressive Distributed Lag (ARDL) bound test approach to examine the long-run determinants of income inequality, and to see how it affect violence crime in Nigeria. Income inequality in Nigeria has increased between 1990 and 2019 as confirmed by the Gini coefficient - from 0.26 to 0.51- placing the country among the unequal countries of the world, with its attendant effect sparking regional and community outbreaks of violence and low pace of economic growth. After investigating its determinants in Nigeria, the study found that income, financial development, and educational level are significant determinants of income inequality..

On the relations between income inequality and violent crime, the study found that income inequality is a significant determinant of violent crime rate in Nigeria. The result of control variables shows that unemployment level, education level and political stability are also determinants of violent crime in Nigeria for the period under study. Also, factors that define income inequality determines violent crime rates in Nigeria.

Based on the findings of the study, it is apparent that the socio-economic condition accompanied by good governance reduced the level of income inequality as well as the rate of violent crime in Nigeria.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Master Sains

**PENENTU KETAKSAMAAN PENDAPATAN DAN KESANNYA  
TERHADAP JENAYAH KEGANASAN DI NIGERIA**

Oleh

**GARBA MOHAMMED GUZA**

Ogos 2020

**Pengerusi : Suryati Ishak, PhD**  
**Fakulti : Sekolah Perniagaan dan Ekonomi**

Objektif utama kajian ini adalah untuk mengkaji penentu ketaksamaan pendapatan dan untuk menentukan hubungan empirikal antara ketaksamaan pendapatan dan jenayah keganasan di Nigeria. Dengan menggunakan dataset siri masa bermula dari tahun 1990 hingga 2019, kajian ini mengkaji hubungan jangka masa panjang antara penentu ketaksamaan pendapatan dan jenayah keganasan melibatkan beberapa faktor sosioekonomi, dan penunjuk tadbir seperti; KDNK sebenar per kapita, kemajuan kewangan, kadar pengangguran, tahap pendidikan, kedaulatan undang-undang dan kestabilan politik. Kajian ini menggunakan pendekatan uji sempadan iaitu *Autoregressive Lagged* (ARDL) untuk mengkaji kesan jangka masa panjang penentu ketaksamaan pendapatan dan bagaimana ia mempengaruhi jenayah keganasan di Nigeria. Ketaksamaan pendapatan di Nigeria meningkat dari tahun 1990 hingga 2019 seperti yang disahkan oleh koefisien Gini - bermula dari 0.26 hingga 0.51 - meletakkan negara ini di antara negara-negara yang tidak setara di dunia. Ini menyebabkan tercetusnya wabak keganasan masyarakat dan serantau, dan kadar pertumbuhan ekonomi rendah. Selepas mengkaji penentu-penentunya di Nigeria, kajian ini mendapati bahawa pendapatan, kemajuan kewangan dan tahap pendidikan adalah penentu penting bagi ketaksamaan pendapatan, selaras dengan model yang digunakan sebelumnya.

Mengenai hubungan antara ketaksamaan pendapatan dan jenayah keganasan, dapatan kajian menunjukkan bahawa ketaksamaan pendapatan adalah penentu penting bagi kadar jenayah keganasan di Nigeria. Hasil pemboleh ubah kawalan menunjukkan bahawa kadar pengangguran, tahap pendidikan dan kestabilan politik adalah penentu jenayah keganasan di Nigeria. Juga, tidak diragui bahawa faktor-faktor yang menentukan ketaksamaan pendapatan menentukan kadar jenayah keganasan di Nigeria.

Berdasarkan dapatan kajian ini, jelaslah bahawa keadaan sosioekonomi lain dan tadbir urus yang baik mengurangkan ketaksamaan kadar pendapatan serta kadar jenayah keganasan di Nigeria.



## ACKNOWLEDGEMENTS

Thanks to Almighty Allah without whose blessing, this study would not have been possible. First and foremost, my deepest wish and most sincere gratitude to my amiable supervisor, Dr Suryati Ishak for her guidance, assistance, advice, suggestion and her precious time spent through the period of writing and conducting the research. Thanks to my supervisory committee member in the person of Dr Nor Yasmin Mhd Bani for her, guidance and support which enabled me to develop a good research work. Furthermore, my appreciation goes to Dr Saad Buba and Mr Dankumo Ali Madina, who is a PhD student under the same supervisor, for their academic guidance and support.

Lastly, I would like to show my sincerest thanks to my family specially my late father, mother and my lovely wife for their support, love and endless encouragement throughout the preparation of this thesis and also my study year in Universiti Putra Malaysia (UPM), without which this study would not be successful.



This thesis was submitted to the Senate of the Universiti Putra Malaysia and has been accepted as fulfilment of the requirement for the degree of Master of Science. The members of the Supervisory Committee were as follows:

**Suryati Ishak, PhD**

Senior Lecturer  
School of Business and Economics  
Universiti Putra Malaysia  
(Chairman)

**Nor Yasmin Mhd Bani, PhD**

Senior Lecturer  
School of Business and Economics  
Universiti Putra Malaysia  
(Member)

---

**ZALILAH MOHD SHARIFF, PhD**

Professor and Dean  
School of Graduate Studies  
Universiti Putra Malaysia

Date: 12 November 2020

## Declaration by graduate student

I hereby confirm that:

- this thesis is my original work;
- quotations, illustrations and citations have been duly referenced;
- this thesis has not been submitted previously or concurrently for any other degree at any institutions;
- intellectual property from the thesis and copyright of thesis are fully-owned by Universiti Putra Malaysia, as according to the Universiti Putra Malaysia (Research) Rules 2012;
- written permission must be obtained from supervisor and the office of Deputy Vice-Chancellor (Research and innovation) before thesis is published (in the form of written, printed or in electronic form) including books, journals, modules, proceedings, popular writings, seminar papers, manuscripts, posters, reports, lecture notes, learning modules or any other materials as stated in the Universiti Putra Malaysia (Research) Rules 2012;
- there is no plagiarism or data falsification/fabrication in the thesis, and scholarly integrity is upheld as according to the Universiti Putra Malaysia (Graduate Studies) Rules 2003 (Revision 2012-2013) and the Universiti Putra Malaysia (Research) Rules 2012. The thesis has undergone plagiarism detection software

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Name and Matric No: Garba Mohammed Guza, GS50524

## Declaration by Members of Supervisory Committee

This is to confirm that:

- the research conducted and the writing of this thesis was under our supervision;
- supervision responsibilities as stated in the Universiti Putra Malaysia (Graduate Studies) Rules 2003 (Revision 2012-2013) were adhered to.

Signature: \_\_\_\_\_  
Name of Chairman  
of Supervisory  
Committee: Dr. Suryati Ishak

Signature: \_\_\_\_\_  
Name of Member  
of Supervisory  
Committee: Dr. Nor Yasmin Mhd Bani

## TABLE OF CONTENTS

	<b>Page</b>
<b>ABSTRACT</b>	i
<b>ABSTRAK</b>	ii
<b>ACKNOWLEDGEMENTS</b>	iv
<b>APPROVAL</b>	v
<b>DECLARATION</b>	vii
<b>LIST OF TABLES</b>	xii
<b>LIST OF FIGURES</b>	xiii
<b>LIST OF ABBREVIATIONS</b>	xiv
<b>CHAPTER</b>	
<b>1 INTRODUCTION</b>	<b>1</b>
1.1 Introduction	1
1.2 Background of the Study	1
1.2.1 Income Inequality	1
1.2.2 Economic Growth in Nigeria	3
1.2.3 Violent Crime	6
1.3 Problem Statement	14
1.4 Objective of the Study	15
1.5 Significance of the Study	15
1.6 Scope of the Research	16
1.7 Organisation of the Study	17
<b>2 LITERATURE REVIEW</b>	<b>18</b>
2.1 Introduction	18
2.2 Theoretical Review for Objective One: Income Inequality and its Determinants	18
2.2.1 Kuznets theory	18
2.3 Empirical Literature for Objective One: Income Inequality and its Determinants	18
2.3.1 Economic Growth and Income Inequality	18
2.3.2 Educational Attainment and Income Inequality	20
2.3.3 Unemployment and Income Inequality	21
2.3.4 Financial Development and Income Inequality	21
2.4 Theoretical Review for Objective Two: Income Inequality and Violent Crime	22
2.4.1 Economic Choice Theory	22
2.4.2 Opportunity Theory	23
2.5 Empirical Literature for Objective Two:	23
2.5.1 Income Inequality and Violent Crime	23
2.5.2 Unemployment and Violent Crime	25
2.5.3 Educational Attainment and Violent Crime	28
2.5.4 Institutional Quality and Violent Crime	29
2.5.4.1 Rule of Law and Violent Crime	30

	2.5.4.2	Political Stability and Violent Crime	30
2.6		Conclusion	31
<b>3</b>		<b>METHODOLOGY</b>	<b>32</b>
3.1		Introduction	32
3.2		Objective One: Income Inequality and Determinants	32
	3.2.1	Theoretical Framework	32
	3.2.2	Empirical Model	33
	3.2.3	Variables Description and Expected Signs	34
	3.2.4	Summary of the Variables and Data Sources	36
3.3		Objective Two: Income Inequality and Violent Crime	36
	3.3.1	Theoretical Framework.	36
	3.3.2	Empirical Model	37
	3.3.3	Variables Description and Expected Signs	38
	3.3.4	Summary of the Variable and Data Sources	40
	3.3.5	Estimation Technique	40
<b>4</b>		<b>EMPIRICAL RESULTS AND DISCUSSIONS</b>	<b>43</b>
4.1		Introduction	43
4.2		Empirical results for Objective One: Income Inequality and Determinants	43
	4.2.1	The Unit Root Test for Objective One	43
	4.2.2	ARDL Bounds Test for Cointegration	44
	4.2.3	The Long-run Results for ARDL Estimate	44
	4.2.3.1	The Long-run Results for Income Inequality	45
	4.2.4	The Short-run results for Income Inequality	46
	4.2.5	Results of Diagnostic Test	47
	4.2.6	Cusum and Cusum Square	48
	4.2.7	Robustness check for objective One	49
4.3		Results for Objective Two: Violent Crime and Income Inequality.	49
	4.3.1	Unit Root Test	50
	4.3.2	ARDL Bounds Test for Cointegration	50
	4.3.3	The Long-run Results for ARDL Estimate	51
	4.3.4	Short-run Results for ARDL Estimate of Violent Crime	53
	4.3.5	Diagnostic Tests Results	54
	4.3.6	CUSUM and CUSUM Square Test	55
	4.3.7	Robustness Check for Objective Two	56
<b>5</b>		<b>CONCLUSION AND RECOMMENDATIONS</b>	<b>57</b>
5.1		Introduction	57
5.2		Summary of the Study	57
5.3		Policy Recommendations and Conclusion	58
5.4		Limitation of the Study	59
5.5		Recommendations for Further Research	59

<b>REFERENCES</b>	61
<b>APPENDICES</b>	73
<b>BIODATA OF STUDENT</b>	79



© COPYRIGHT UPM

## LIST OF TABLES

<b>Table</b>	<b>Page</b>
1.1 Violent Crime Index from 1990 and 2019	7
3.1 Variables and Data Sources	36
3.2 Variables and Data Sources	40
4.1 Results of Unit Root Test for Objective One	43
4.2 Result of the Bound test for cointegration	44
4.3 Results of the Long-run Coefficients of ARDL	45
4.4 Short-run Coefficient of ARDL	46
4.5 Diagnostic Test Results	47
4.6 Results of the Unit Root Tests	50
4.7 Result of the Bounds Test for Cointegration	51
4.8 Long-run Coefficients ARDL	52
4.9 Short-run Coefficient Results on ARDL	54
4.10 Results of Diagnostic Tests	54

## LIST OF FIGURES

<b>Figure</b>	<b>Page</b>
1.1 Gini Index for Some Countries (2016)	2
1.2 Income Inequality (Gini Index) in Nigeria from 1990 – 2019	3
1.3 Economic Growth in Nigeria 1990-2019	4
1.4 Crime Trend in Nigeria from 1990-2019	5
1.5 The Trend of violent crimes in Nigeria from 1990-2019	6
1.6 Criminals Jailed for Committing Murder in Nigeria, 1990-2019	8
1.7 Income Inequality and Violent Crime in Nigeria 1990 - 2019	9
1.8 Unemployment Rate in Nigeria from 1990 - 2019	10
1.9 Unemployment and Violent Crime Rates in Nigeria, 1990-2019	11
1.10 Institutional Quality index in Nigeria from 1990 - 2019	13
1.11 The rule of law and Violent Crime in Nigeria, 1990 – 2019	13



## LIST OF ABBREVIATIONS

ARDL	Autoregressive Distributed Lag
ADF	Augmented Dickey-Fuller
AIC	Akaike Information Criterion
CUSUM	Cumulative Sum of Recursive Residual
ECM	Error Correction Term
GDP	Gross Domestic Product
IPOB	Indigenous Peoples of Biafra
OECD	Organization for Economic Co-operation and Development
NBS	Nigeria Bureau of Statistics
NPC	National Population Commission
PP	Phillips-Perron
RESET	Regressive Specification Error Test
SIC	Schwartz Information Criterion
UECM	Unrestricted Error Correction Model
UNODC	United Nation Office for Drugs and Crime
UPM	Universiti Putra Malaysia
WHO	World Health Organization
WDI	World Development Indicator
WGI	World Governance Indicator

# CHAPTER 1

## INTRODUCTION

### 1.1 Introduction

The Kuznets theory (1955) elaborated the relationship between income inequality and economic growth, as indicated in inverted U-shaped. The Kuznets theory reputed that at the initial stages of growth in an economy, the disparity in income rises. As the growth in the economy continues, inequality reaches its turning level and then start declining with an increase in economic growth. Thus, the Kuznets theory explained that in the short-run, there is a positive correlation between inequality of income and economic growth, while at the long-run there is a negative correlation between inequality of income and economic growth. The study seeks to test and analyze the theory of inverted U-curve on income inequality and economic growth propounded by Kuznets in 1955.

### 1.2 Background of the Study

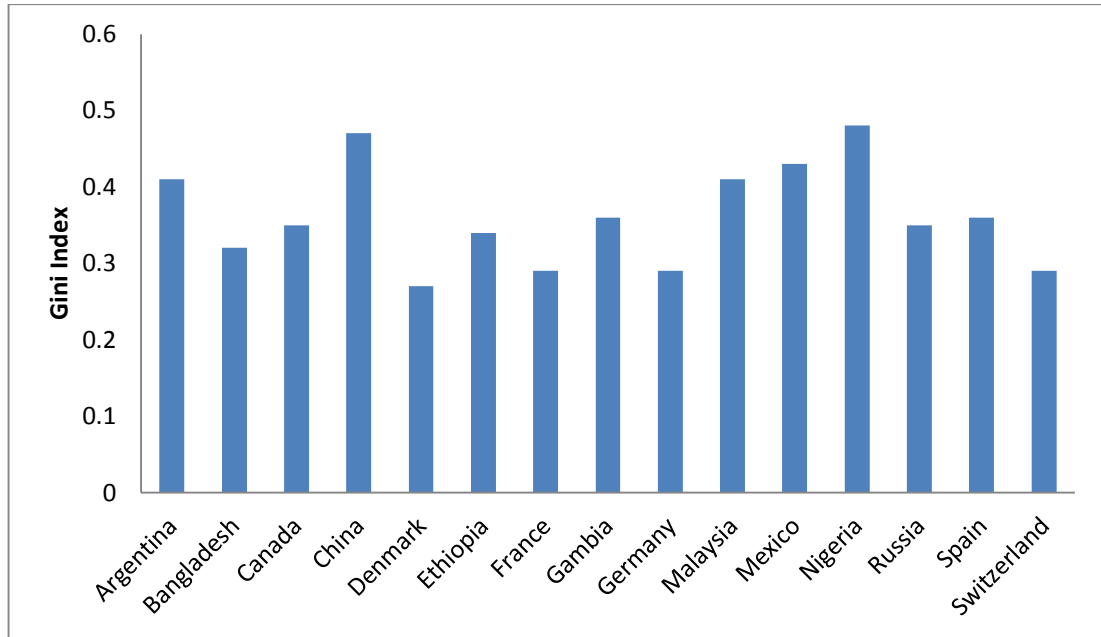
#### 1.2.1 Income Inequality

Income inequality means an uneven distribution of income between individuals or households in the economy, calculated by the percentage of the population's income. There are other measures and metrics used to calculate income inequality, such as the Hoover Index, the Theil Index, and the Gini Index. Nevertheless, the Gini coefficient is the most commonly used coefficient developed by Corrado Gini in 1992. The range of scale is between 0 and 1, with 0 as the minimal inequality and 1 as vast inequalities.

The word inequality is the main nerve of economic growth and production inefficiency. Income inequality in a specific year is when a significant gap exists in households or individual's disposable income, and it includes household income, capital income, government cash transfers, payroll taxes and social security contributions. The Gini coefficient is based on an analysis of the similarities between the aggregate proportions of the entire population, and the cumulative proportions of income received (Organization of Economic Cooperation and Development (OECD), 2017). Clark (2015) reported that more than 70% of the total population of less developed nations live in an unequal society. In a country, there are different categories of inequality, such as wealth inequality, gender inequality, health inequality and income inequality. Income inequality is the most widely recognized among the categories (OECD, 2017).

Figure 1.1 describes the income inequality (Gini Index) of selected countries of the world. Denmark has the lowest Gini coefficient of 0.269, followed by France and Germany with 0.292 and 0.295, respectively. Nigeria has the highest income

inequality of 0.467, followed by China and Mexico having the Gini index of 0.465 and 0.434, respectively (UNU-WIDER, 2019). Therefore, it is essential to investigate the income inequality rate of Nigeria when compared with countries having the same population and development outlook, and its consequences on the economy.

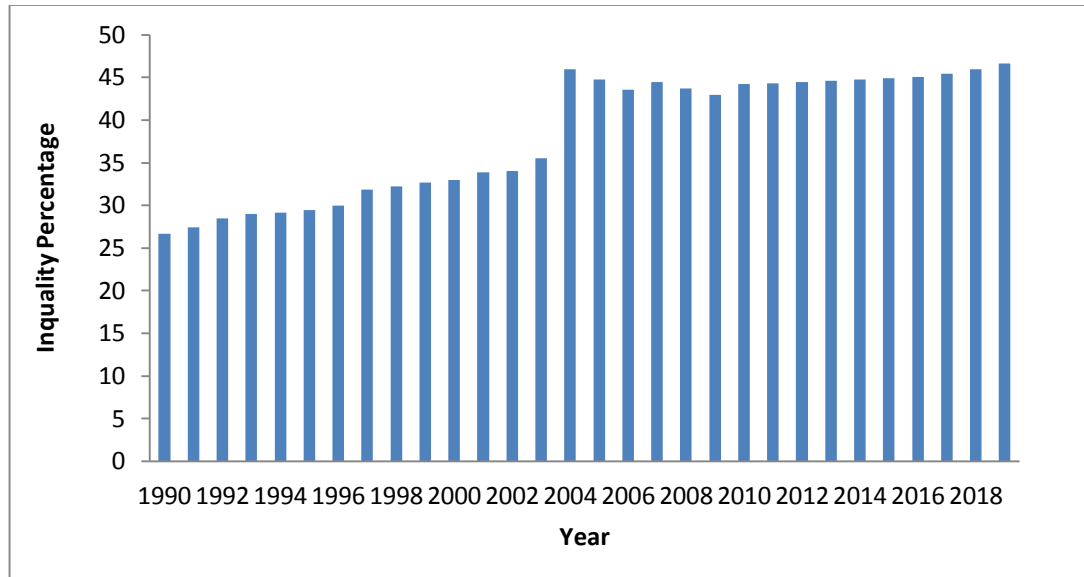


**Figure 1.1 : Gini Index for Some Countries (2016)**  
 (Source: Author’s computation, data from UNU-WIDER, 2019)

Income disparities between the rich and the poor are still on the rise. Nigeria is a developing economy blessed with a variety of natural and mineral resources. However, unfair distribution of income from natural resources among its people and regions led to divisions of the nation into regions (Human Right Watch 2015).

Since the crisis of early 2000, Nigeria’s financial sector has directed great attention and support toward domestic financial markets with long term review and access to various segment of the population as well as entrepreneurship. Nevertheless, it did not increase the income of the populace in the country.

Income inequality would remain noticeable in the coming years (Economic Forum, 2015), especially in developing countries like Nigeria with a relatively high- and rising-income inequality. Nigeria is one of the countries with a high level of income inequality among its population in Africa and the globe (WDI, 2017). For more than two decades, the country has reported an average Gini index of more than 0.39, which is relatively high. Recently, specifically for the period under study, the average percentage increase in income inequality in Nigeria was also 0.471 percent (WDI, 2017). Figure 1.2 shows the trend in income inequality as measured by the Gini index for Nigeria from 1990 to 2019.



**Figure 1.2 : Income Inequality (Gini Index) in Nigeria from 1990 – 2019**  
 (Source: Author’s computation 2019)

According to Figure 1.2, the Gini index in Nigeria for the period under study ranged between 0.27 and 0.51, which means that income inequality, when taken in percentage represents between 27 percent and 46 percent. A World Inequality report in 2018 indicates that, if the government does not address or monitor increased inequality, it may lead to various sorts of economic, social, and politically disastrous outcome. For instance, high-income inequality in a society or community may lead to crime and often create social tension. This economic downturn could give birth to increasing income disparity among people in society.

Rapid economic growth generates greater income inequality. However, it may be said to have shifted economic inequality from a global to a domestic scale, increasing the danger of a more significant impact of inequality. Ghosh et al. (2016) argued that economic development reduced the disparity in the distribution of income in the economy while it has a little negative effect or no effect on crime rates in countries that have the highest capital abundant. Generally, it is believed that trade openness provides some welfare to the economy; however, these benefits are hardly distributed equally due to the country’s poor institutional quality. The UNCTAD (2012) reiterated that an increase in income inequality is significant to economic condition. The report also reflects the one it issued in 1997, indicating that all developing countries involved in trade with other countries of the world had experienced an increase in wage inequality.

### 1.2.2 Economic Growth in Nigeria

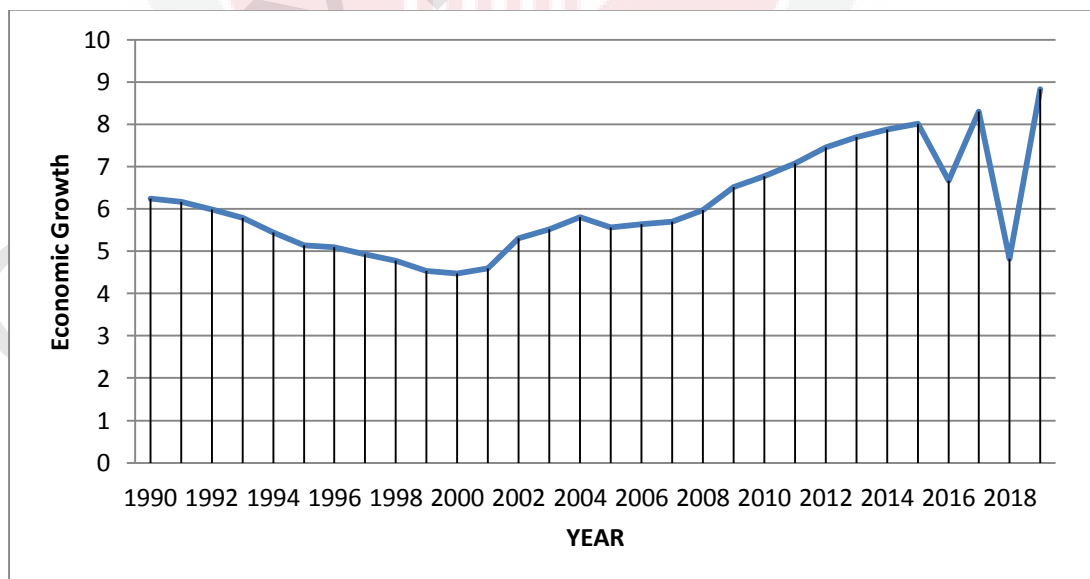
Economic growth in Nigeria is presumed not only to raise the per capita income in the economy. It is intended to uplift the citizens’ welfare and standard of living. Moreover,

in Nigeria, there is an inverse relationship between development and economic growth which is not necessarily defined by economic growth, however is attributed how the income is distributed among the region.

Nigeria has been a giant of Africa with population of above 200 million people, constituting about 42% of the entire African population. Nigeria is blessed with both natural and human resources, is the largest exporter of oil in Africa and blessed with gas (Treasury Today, 2014). Nigeria's HDI was 0.372, which rank the country in less human development and is positioned at 152 out of 188 countries (Human Development Report 2015).

Ranker (2016) indicated that Nigeria is among the top 20 economies in the African continent, with a GDP of \$594.257 billion. On the contrary, African Development Bank (2014) reported that Nigeria experiences slow pace of growth since 2015 due to internal and external crises such as security challenges and decline of oil prices. The economic growth decreased from 6.22% in 2014 to 3.78% in 2016, and improved to 5.03% in 2017 to date (NBS, 2019). Figure 1.3 shows the trend of real economic growth from 1990 to 2019.

The interrelationship between income inequality and economic growth as well as violent crime is important because the increase in income inequalities have generated many socio-economic, political unrest and the increase in crime rate contribute to a decrease in the economic growth and standard of living in Nigeria. Hence, this study investigates the effect of economic growth on income inequality and how they influence violent crime.



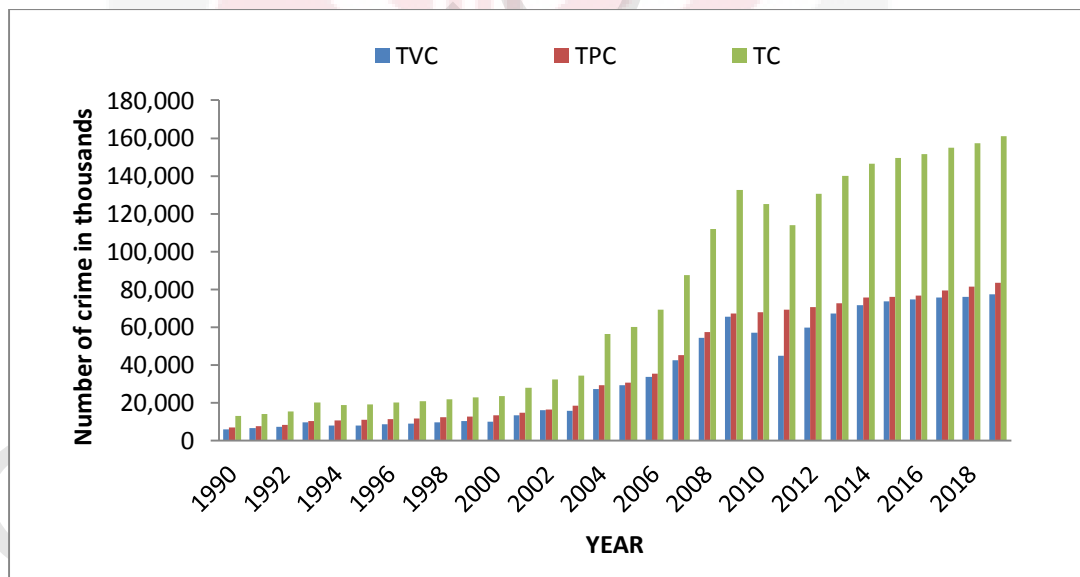
**Figure 1.3 : Economic Growth in Nigeria 1990-2019**

(Source Nigeria Bureau of Statistic 2019) Author's computing using Eviews 10.

## Crime Trend in Nigeria

Crime in Nigeria has shown evidence of increasing for the past decades. Figure 1.4 shows the crime trend in Nigeria over the past twenty-nine years period, from the year 1990 to 2019. As shown in Figure 1.3, there was an increase in crime rate from 69,092 in the year 1990 to 187,836 in 2016. This represents a 272 percent increase over the past twenty-nine years. The total crime index gradually decreased in 2011, however, has continued to increase from the year 2011 to date. The high crime index was in 2009, with 133,505 total number of crimes. Nigeria has witness series of higher crime rates during the economic meltdown in the country in the year 2008. This statistics indicates that the economic situation in the country was amongst the factors affecting the crime rates, and thus, has a close relation to the total crime index in Nigeria (Omotor, 2010).

Based on the crime statistics from 1990 to 2019, crime against property has shown a rapid increase that can be seen as the main contributor to the rising level of total crime index in Nigeria. Violent crime has generally remained the same with just a gradual increase. The crime statistics indicated that crime against property account for 60% of all crimes reported for the period under study. However, violent crimes attracted more attention, as it contributed only 40% to all crime reported during the period under study of 1990-2019.



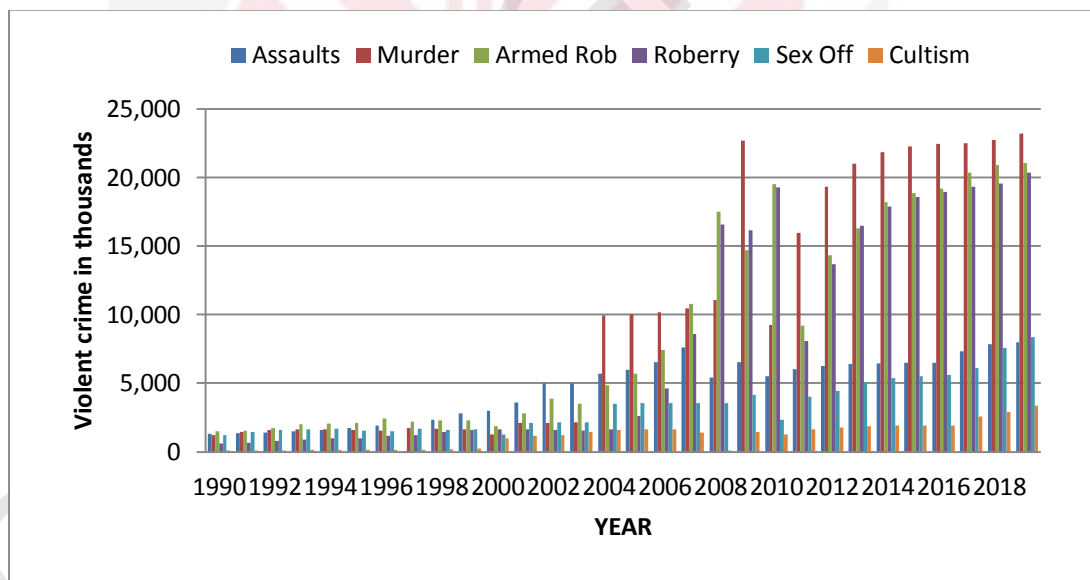
**Figure 1.4 : Crime Trend in Nigeria from 1990-2019**

(Source: Author's Computation, 2019: National Bureaus of Statistics NBS, 2019)

Furthermore, the statistics indicate that violent crimes indicate an increase at a slower rate than crime against property which showed a drastic surge between the years 2009 and 2019. Violent crime has grown by 162 percent and crimes against property by 188 percent.

### 1.2.3 Violent Crime

Criminal activities in Nigeria have always been a matter of concern as the high rate of violent crime have attracted attention and concern from both national and international media and organisations (Nigeria Watch, 2014). The most common criminal activities in Nigeria include armed robbery (with firearms), murder, cults, robbery (without firearms), and sexual violence. Violent crimes are further subdivided into murder, homicides, rape and armed robbery, while property crime comprises theft crime, burglaries and car theft (UNODC, 2013). This study intends to study violent crime because Nigeria has been experiencing series of violent crime, which include the activities of Boko Haram (prohibition of western education) terrorists in the Northeastern part of the country since 2009 to date, Niger–Delta militants, kidnapping for ransom, Indigenous Peoples of Biafra (IPOB) crisis, farmers and herdsman crisis and other religious/ethnic crises. These categories of violent crime are the most common, constituting about 40% of total crime in Nigeria National Bureau of Statistics (NBS, 2017). Secondly, violent crimes have attracted the attention of all citizens because these crimes lead to bloodshed and economic meltdown. The causes of it are associated with economic factors and good governance in Nigeria such as income inequality, unemployment rate, education level, the rule of law and political instability.



**Figure 1.5 : The Trend of violent crimes in Nigeria from 1990-2019**  
(Source: Author’s Computation 2019: National Bureaus of Statistics NBS, 2019)

Figure 1.5 shows the violent crime trend statistics for the period under study, 1990 to 2019, whereby murder rates have shown evidence of quick growth rate to the total violent crime index in Nigeria. This study chooses murder as the proxy for violent crime because it has the highest trend within the period of study. In 2016, the total number of violent crime rate committed for the period amounted to 832,910; and murder rate accounted for about 28 percent, followed by armed robbery and robbery

which accounted for 25 and 22 percent, respectively. The measure of murder rates used by the current study is the number of offenders who committed the murder (per 100,000 populations) and convicts in each year. In Nigeria, the increase in violent crime rates has created the mood of strain, fear, and anxiety in the country. Ajaegbu (2012) argued that violent crimes such as murder, robbery, armed robbery, and kidnapping are the most common crimes that cause insecurities in Nigeria.

Violent crime in Nigeria, particularly murder, is on the increase since the year 1990 to date, with a total number of 832,910 criminals were convicted and imprisoned for assault, robbery, armed robbery, sexual violence, cultism, and murder, out of which 229,725 are murderers. Thus, murder occupies about 28 percent of the total violent crime committed in Nigeria from 1990 through 2019. Also, between 1990 and 2019, murder crime has increased by 95 percent, from 1,201 numbers of offenders in 1990 to 22,476 in 2019 (NBS, 2019). Figure 1.5 shows the trend of violent crimes, with murder having the highest trend especially between 2008 and 2010, followed by armed robbery due to illegal importation and widespread of arms and ammunition across the country.

**Table 1.1 : Violent Crime Index from 1990 and 2019**

Types of Violent Crimes	1990 No. of crime	2019 No. of crime	Percentage increase (%)
Assault	1,287	8,735	85%
Murder	1,201	25,755	95%
Armed Robberies	1,499	22,80	92%
Robberies	607	23,011	97%
Sexual Offence	1,210	10,501	85%
Cultism	84	3,911	97%
<b>Total Violent Crime</b>	<b>5,888</b>	<b>94,803</b>	<b>94%</b>

(Source: National Bureaus of Statistics NBS, 2017 Author's computing )

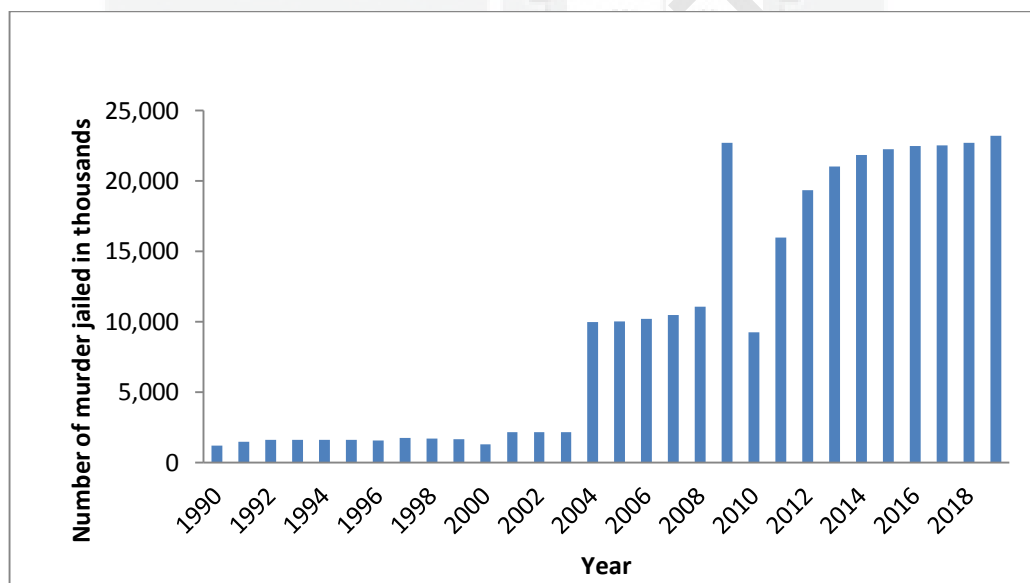
According to NBS (2019) report, the total violent crime in Nigeria has been on increase from 5,882 reported cases in 1990 to 94,803 in 2019 with 94 percent increase. Based on the violent crime statistics within the period under study, recorded cases of murder increased from 1,201 in 1990 to 25,755 cases in 2019 with a percentage growth rate of 95 percent, which is considered very high. Armed robbery increased from 1,499 cases in 1990 to 22,890 cases in 2019; robbery increased from 601 cases in 1990 to 23,011 cases in 2019; assault with 1,287 cases in 1990 to 8,735 cases in 2019 (with 85% increase). Sexual violence had 1,210 cases in 1990 to 10,501 cases in 2019 with an increase of 85%, and lastly, cultism with 84 cases in 1990 to 3,911 cases in 2019, which is also the least violent crime that occurred during the period under study from 1990 to 2019.

Figure 1.6 shows the chart of murder rate described by the number of criminals jailed or imprisoned for murder in 1990 through 2019. As seen, between 1990 and 2019, the number of murderers has increased from 1,201 in 1990 to 25,755 number of jailed



murderers in 2019. This increase represents almost 100%, which is relatively high. Murder has the highest rate in 2019 more than armed robbery and robbery, although the highest rate of murder during the period under study was in 2009. The high rates of total violent crime during the period under study occurred when there was uprising political instability in the country, accompanied by other social unrest such as kidnapping for ransom, farmer/herdsmen crisis, militancy and Boko Haram, and all are related to the rising rate of murder committed in Nigeria.

Besides, other types of violent crime such as armed robbery, robbery, cultism assaults and sexual violence have also recorded a tremendous increase during the period under study (1990-2019). For instance, armed robbery rate was measured by the number of armed robbers (convicted) in 2019, which was 22,890, second after murder. Robbery, assaults, and sexual violence were 23,011, 8,735 and 10,501, respectively as of 2019. In 1990, the rates of armed robbery, robbery, assaults, and sexual violence were 1,499, 601, 1,287 and 1,210, respectively.



**Figure 1.6 : Criminals Jailed for Committing Murder in Nigeria, 1990-2019**  
(Source: Author's Computing, NBS 2019)

Reports by UNODC (2009) revealed that crimes are result of some socio-economic condition such as income inequality, educational level, unemployment and poor governance. This study, therefore, will include in its background the determinants of income inequality and violent crime, and discuss their existence in Nigeria.

The rising income inequality may also create violence in a society or country at large because most of the country's resources are controlled by few privileged individuals or a particular region and leaving the rest of population, and other regions in extreme poverty. UNODC (2013) reports that the unequal distribution of country economic resources may lead to crime and violence. Lack of equal opportunity among citizens

or region in a country to have access to the income needed for their means of survival is often the driven factor that instigates individuals or particular region in the country to involve in agitating for their right, as a result, will turn to crime and violence in a country especially poor individuals and neglected regions.

The following scatter plots in Figure 1.7 illustrate a one-on-one relationship between income inequality and violent crime rates (murder) measured by the total number of inmates whose jails were due to murder.



**Figure 1.7 : Income Inequality and Violent Crime in Nigeria 1990 - 2019**  
(Source: Author’s computation: NBS, 2019)

The above scatter plots indicate that when violent crime and income inequality have one-on-one relationship, they exhibit positive impact, meaning that inequality of income is positively correlated to violent crime in Nigeria. However, only a one-on-one relationship is insufficient to conclude the effect of inequality of income on violent crime in Nigeria, as there are other variables such as unemployment, institutional quality and education among others, which equally function as factors that determine violent crime.

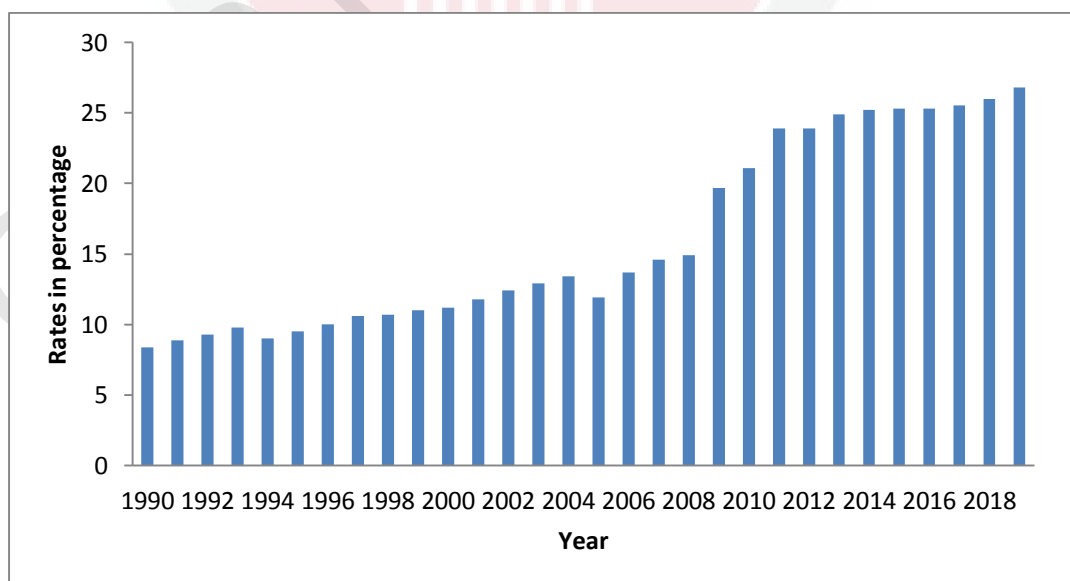
Unemployment is an economic factor related to crime or responsible for criminal activities (Adebayo, 2013). Individual who experiences economic hardship can feel isolated from society and has less respect for the law governing the country. Nigeria’s population is estimated about 180 million people (NBS, 2017). Unemployment and

crime are among the socio-economic consequences of the increase in population. As the labour force increases, employment growth is inadequate to absorb the labour market participants in Nigeria especially with the rise in the proportion of youth; thus, crime due to high unemployment increases. The inadequate representation of youth into the labour force has several socio-economic and political influences, and cause increase in crimes in Nigeria. Unemployment and crime are related because unemployed individuals are involved in crimes to meet ends.

One of the determinants of a country's standard of living is the level of employment the country had recorded or achieved. The higher level of unemployment means a low standard of living while a higher employment level depicts a better standard of living. People without a job cannot contribute to the production of goods and services in an economy, thereby affecting their level of income and as well living standard. Although a certain level of unemployment is a normal phenomenon in an economy with thousands of firms and millions of labour force, keeping workers employed will help to achieve a higher level of GDP. However, when the majority of the labour force is idle, it may lead to social unrest.

In Nigeria, unemployment is a serious issue that needs urgent attention. In general, unemployment in Nigeria was relatively high from 1990 to 2019, whereby unemployment rate increased by more than 68 percent from 8.4 percent of the total labour force in 1990 to 26 percent of the total labour force in 2019 (NBS 2017; 2019), there is a massive increase in the rate of unemployment in the country.

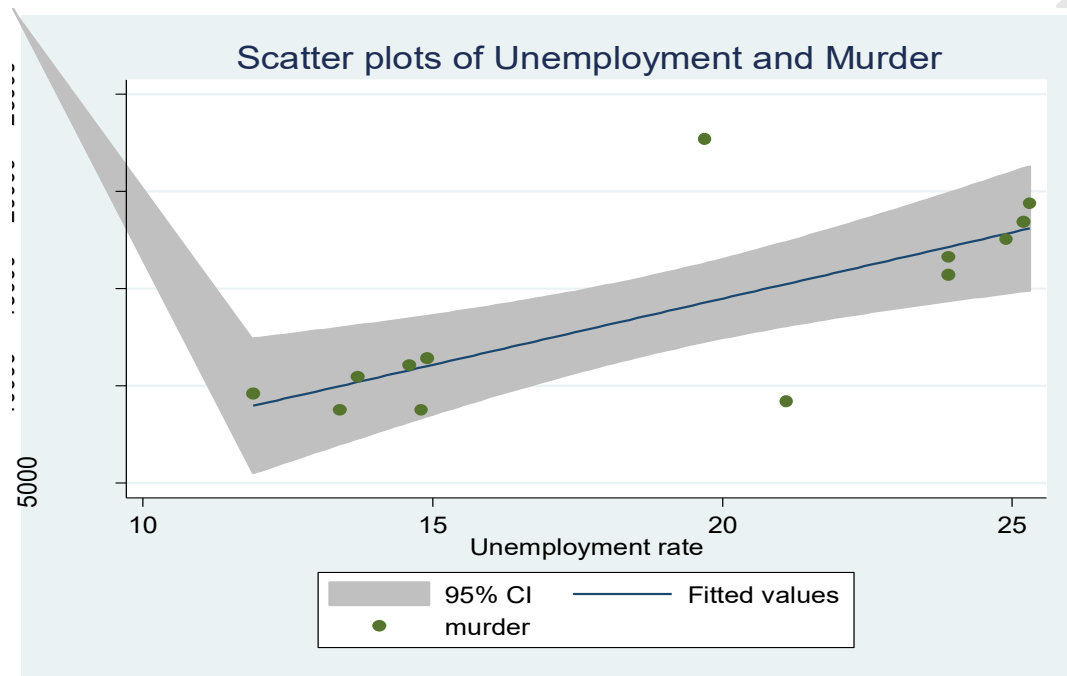
Figure 1.8 shows the trend of unemployment measured by the percentage of the unemployed labour force to the total labour force in Nigeria from 1990 to 2019.



**Figure 1.8 : Unemployment Rate in Nigeria from 1990 - 2019**

(Source: Author's Computation: NBS, 2019)

The following scatter plots in Figure 1.9 show a one-on-one relationship between violent crime and unemployment in Nigeria. It shows that violent crime and unemployment are positively related, thus, the rising level of unemployment in Nigeria is perceived to be the reason of the increase in violent crime in the country, especially between 2004 and 2019.



**Figure 1.9 : Unemployment and Violent Crime Rates in Nigeria, 1990-2019**  
(Source: Author’s Computation 2019, NBS, 2019)

Nigeria’s unemployment rate continued to increase up to 25.3 percent in 2016 compared to 8.4 percent in 1990, and 11 percent in 1999. According to the 2015 National Bureau of Statistics’ (NBS) report, the unemployment rate was 14.9 percent in 2008, and increased to 19.7 percent in 2009 followed by an increase up to 21.1 percent in 2010; 23.9 percent in 2011; and 27.36 percent in 2012. The unemployment rate declined to 24.9 percent in 2013 and increased to 25.2 percent in 2014; and remained at 25.3 percent in 2015 and 2016, respectively. The NBS social statistic report (2017) indicated that 65 percent of Nigeria’s populations are unemployed.

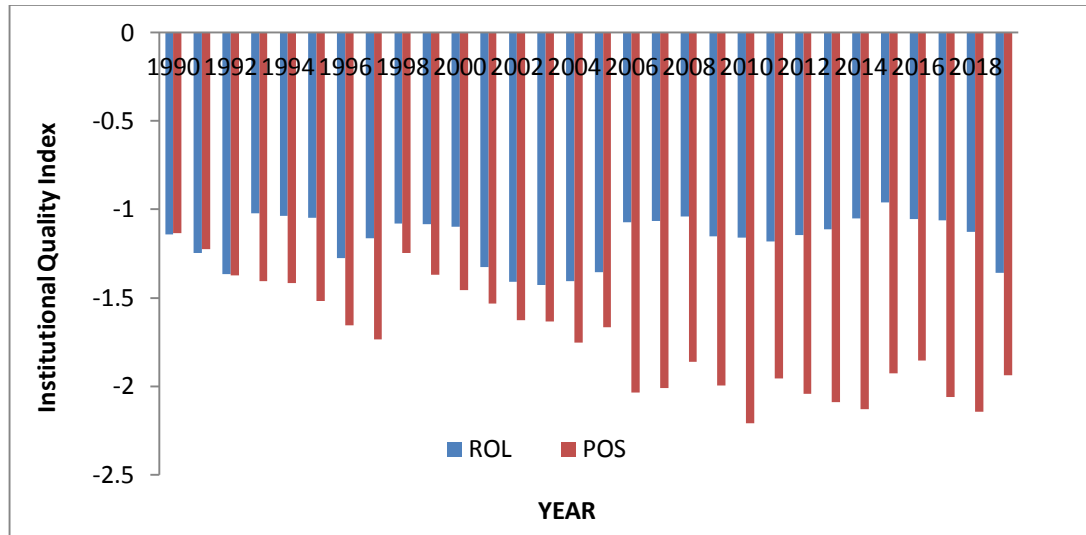
Governance is the process of governing a country or legal entity. It is the activity of governing, controlling and regulating a nation. Therefore, good institutions are the indication of effectiveness of the government in all its public sector in terms of free dissemination of information and sound legal system for ensuring socio-economic development and an enabling environment for investment. At the same time, weak institutions in a country have resulted in uncertainty, insecurity, and instability in the political atmosphere of a country. Poor governance leads to political instability in a country which discourages both local and foreign investments, thereby affecting economic growth negatively with a consequence of increased unemployment in the

economy. The rule of law states that everything in a country must follow the law, which means that all government institutions may justify their deed according to the law of a country. The inability to justify this may result in a lawless country that has high violence and crime rates. Crime in a country often occurs due to opportunity and economy situation of a country. In Nigeria, weak governance due to political instability and the weak rule of law (legal system) has led criminals to evade justice.

The political system in the country has brought about a sense of disunity and making it impossible for the government to achieve its aspiration. The situation has given rise to the isolation of a particular region and the agitation for freedom, which in turn leads to criminal activities and violence as a means of achieving their goals that resulted in bloodshed and loss of lives. The rule of law strengthened the principle of transparency and respect for human right, without which a country would exist in a state of chaos and violence, on the other hand, a country with lawlessness becomes vulnerable to violence and crime.

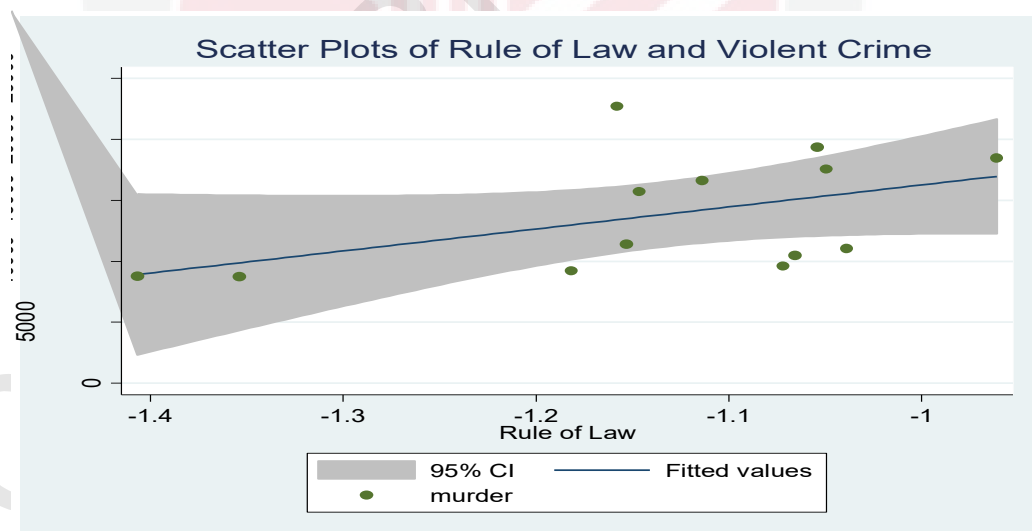
This study used the rule of law and political stability to proxy institutional qualities. Their scores are too low, showing negative values indicating lack of the rule of law and political instability in Nigeria. The rule of law reflects justice, respect for human rights and liberties, while political stability reflects the atmosphere environment and democratic regime. Broadly, governance captures law and individuals' rights. It outlines the interaction between people (North, 1990.). The study extracted the data from the Worldwide Governance Index (WGI) of the World Bank, which ranges from -2.5 to 2.5, with 2.5 having the highest quality of governance and vice versa. In Nigeria, average institutional quality index between 1990 and 2019 is -1.128. The governance index in Nigeria has indicated negative values throughout the study period, thus, the quality of institutions in Nigeria is perceived to be below par. Similarly, the rule of law and political stability both have recorded negative index, whereby, the average rule of law and political stability indices for the period under study are -1.134 and -1.963, respectively

Figure 1.10 shows the bar chart for political stability and the rule of law. The charts revealed negative values with political stability having the highest negative value compared to the rule of law trend.



**Figure 1.10 : Institutional Quality index in Nigeria from 1990 - 2019**  
 (Source: Author’s Computation 2019: World Governance Indicator WGI World Bank, 2020 **Note: ROL** is the rule of law and **POS** refer to Political stability)

The following scatter plot in Figure 1.11 shows that violent crime and the rule of law are positively related, however, this not enough to conclude that the rule of law causes violent crime in Nigeria.



**Figure 1.11 : The rule of law and Violent Crime in Nigeria, 1990 – 2019**  
 (Source: Author’s Computation: World Development Indices WDI World Bank, 2020; NBS, 2020)

### 1.3 Problem Statement

The goal of reducing the simultaneous problem of inequality among the weak economies was culminated in the Millennium Development Goals (MDG) initiative whose subsequent extension in Nigeria resulted in the establishment of National Economic Empowerment and Development Strategies (NEEDS), with State Economic Empowerment and Development (SEEDs) at state level and Local Economic Empowerment and Development (LEEDs) at local government level. However, the objectives of these policies were not achieved due to the socio-economic and governance obstacles that led to rising income inequality.

Income inequality is one of the socio-economic problems affecting both developed and developing nations across the globe. High inequality in income may create economic inefficiency and less economic growth and development because violence may arise from inequitable distribution of income in a society or country along with some social, political, and economic factors that may distort the efficient workings of the economy.

In reality, Nigeria's increasing rate of income inequality is typically one of the negative consequences of development-free economic growth. It is therefore pertinent to have in place macroeconomic and development policies that could help to reduce the wide gap in inequality of income. The problem of inequality of income distribution in Nigeria has led many to question the efficacy of economic growth in enhancing equitable distribution of income (WDI, 2017), whereby, despite the average 8 percent growth rate of GDP within the period under study, the income inequality widened. Furthermore, despite benefitting from the domestic financial market, the disparity between higher-income earners and low-income earners remained unchanged. Indeed, the lack of equality in the standard of living across countries is one of the most significant issues in the field of development economics; hence this study investigates its determinants and its linkage with violent crime.

In Nigeria, income inequality is relatively high for the period between 1990 and 2019, with average Gini index of between the range of 0.27 to 0.51, which means that within this period, income inequality has increased by 41 percent, making it worrisome, especially when accompanied by some social unrest and violence. The rising income inequality may also reduce economic development and investment in the country because most of the country's resources are controlled by few privileged individuals or particular region leaving the rest of population and other regions in extreme poverty. According to UNODC (2013) report, the unequal distribution of the country's resource may lead to crime and violence. Lack of equal opportunity among the citizens or regions to have access to the income needed for their means of survival is a driving force that instigates individuals or particular region to start demanding for their rights, as a result, may turn to crime and violence in a country especially by the needy individuals and neglected regions. As motivational theory explained during the economic hardship, individuals may likely get involved in criminal activities. The violent crime rate in Nigeria has kept rising, attracting the attention of the

policymakers and the citizens, with a full broadcast on both the social media and newspapers. The increasing level of reported violent crime cases in the social media and newspapers has brought reactions at many levels of the community in Nigeria, especially the aspect of violent crime. Nigerians are disturbed by the general increase in the rate of violent crime, having many reported cases of murders, armed robbery, sexual crimes assaults and robbery.

The trend of violent crime in Nigeria demands urgent attention from the government and other agencies saddled with the responsibility of curbing it. However, it is of great importance to set up an empirical study to examine the determinants of the violent crime rate in Nigeria in order to minimize its level. As far as Nigeria is concerned, empirical studies on crime that examined the relationship between crime and economic variables are relatively few (see Omotor, 2009; 2010; Ajaegbu, 2012). The economics of crime theory that links income inequality and violent crime indicates that, a country with high inequality experience series of crime. The higher the inequality, the chance for a low-income individual to be involved in criminal activities. The theory further argued that income inequality is associated with various adverse effects, including violent crime and low level of educational attainment.

#### **1.4 Objective of the Study**

The general objective of this thesis is to examine the determinants of income inequality and its impact on violent crime in Nigeria. Specifically, the objectives of the study are:

- i. To identify the determinants of income inequality in Nigeria using the Kuznets curve theory.
- ii. To investigate the link between income inequality and violent crime in Nigeria

#### **1.5 Significance of the Study**

This study investigated the determinants of income inequality and its impact on violent crime in Nigeria. Some of the factors assumed to be responsible for income inequality are socio-economic variables, economic growth, and financial development. Meanwhile, violent crime is perceived to be caused by income inequality, socio-economic variables and institutional quality. The significance of this study is the inclusion of economic growth as one of the determinants of income inequality while including the governance indicators amongst the determinants of violent crime.

Previous studies on the determinants of income inequality only considered socio-economic factors such as educational attainment (Abdullah et al., 2017), unemployment (Ewubare & Okpani (2018), and financial development (Shahbaz et al. 2015), but none of the studies have investigated the relationship between economic growth and income inequality in Nigeria. The study used the Kuznets theory of



inverted U-shape to tests the validity of the link between economic growth and income inequality in Nigeria. To the best of my knowledge, this is the first of its kind, hence filling that gap.

Furthermore, the studies in the economics of crime dwelled into income inequality, and socio-economic factors such as unemployment (Bratanova (2017), educational attainment (Lochner and Moretti (2004), in some instances, institutional quality are also included (Habibullah et al. (2016), but all in countries other than Nigeria. However, this study is the first of its kind in Nigeria that included the institutional quality – the rule of law and the political instability- in the model of income inequality and violent crime in Nigeria to see whether the quality of institutions can explain variation in the rate of violent crime in Nigeria.

The findings from this study will cast more light on the significant causes of income inequality in Nigeria especially that of the economic growth as will be explained by the Kuznets curve. Similarly, it will point out the implication of income inequality and institutional quality on the violent crime rate in Nigeria, with the aim to awake policymakers to formulate policies towards reducing income disparity, by changing the direction of inequitable distribution of resources, increasing economic growth and improving quality of institutions, in order to reduce or eradicate crime in the country.

Lastly, researchers will find it useful for future studies on income inequality and violent crime, which may be used as a reference point.

## **1.6 Scope of the Research**

There are various factors affecting income distribution and violent crimes as discussed in various disciplines such as economics of crime studies, psychology, economics, sociology and criminology. In the past, the literature of crime and empirical research in the economics of crime indicated three (3) main factors affecting crime; economics, deterrence, and socio-demography factors (Ishak & Bani, 2017; Saridaskis & Spengler, 2012; Lagrage, 2003). Among those factors are inequality of income, level of unemployment, poverty rate, education attainment, population, urbanization, police size, and criminal justice system, to mention just a few. This study targets the determinants of income inequality, and the effect of income inequality on violent crime in Nigeria. Other additional control variables such as unemployment, the rule of law, political stability, financial development, real GDP per capita and educational attainment form part of the model. The study is limited to Nigeria, based upon the availability of time-series data. The period covered by the study for both objectives is 29 years (1990 to 2019).

## 1.7 Organisation of the Study

This study is divided into five chapters. Chapter One introduces the study, the background of the study, statement of the problem, objectives, significance of the research study, the scope, and the organization of the research study. Chapter Two reviews theoretical and empirical studies based on the objectives of the study. Chapter Three presents the methods of achieving the stated objectives of the study, the model specification, variables and their measurements, sources of data, estimation techniques, and definitions of terms. Chapter Four presents and discusses the results and interpretation of the empirical findings of the study. Chapter Five presents the conclusions and policy implications, which are provided based on the results obtained in Chapter Four.



## REFERENCES

- Abdullah, A., Doucouliagos, H., & Manning, E. (2015). Does education reduce income inequality? A meta-regression analysis. *Journal of Economic Surveys*, 29(2), 301–316.
- Abdullahi, H. G. D. (2012). Tax Administration in Kano State: Problems and Prospect. *International Journal of Arts and Commerce*, 1(3), 1–6.
- Adebayo, A. A. (2013). Youths' unemployment and crime in Nigeria: A nexus and implications for national development. *International Journal of Sociology and Anthropology*, 5(9), 350.
- Adejumobi, S. (2004). Democracy, Good Governance and Constitutionalism in Africa, in Sylvester Odion-Akhaine, Governance: In *Nigeria in the World* (pp. 11–21). Lagos: Centre for Constitutionalism and Development).
- Afonso, A., Schuknecht, L. & Tanzi, V. (2010). Income distribution determinants and public spending efficiency. *Journal of Economic Inequality*, 8(3), 367–389.
- Aigbokhan, B. (2000). Poverty, growth and inequality in Nigeria: A case study. Retrieved from [http://aercafrica.org/index.php/publications/view\\_document/112-poverty-growthand-%0Ainequality-in-nigeria-a-case-study](http://aercafrica.org/index.php/publications/view_document/112-poverty-growthand-%0Ainequality-in-nigeria-a-case-study)
- Ajaegbu, O. O. (2012). Rising youth unemployment and violent crime in Nigeria. *American Journal of Social Issues and Humanities*, 2(5).
- Akpoilih, R., & Farayibi, A. (2012). Economic Growth and Inequality in Nigeria: Magnitudes and Challenges. Available at SSRN 2845346., (2845346).
- Alesina, A., Piccolo, S., & Pinotti, P. (2018). Organized crime, violence, and politics. *The Review of Economic Studies*, 86(2), 457–499.
- Aluko, O. (2010). Rule of law, planning and sustainable development in Nigeria. *Journal of Sustainable Development in Africa*, 12(7), 88–95.
- Andrés, A. R., & Asongu, S. A. (2013). Fighting software piracy: which governance tools matter in Africa? *Journal of Business Ethics*, 118(3), 667–682.
- Andrés, A. R. (2002). Crime in Spain: an empirical investigation. *Unpublished manuscript, University of Southern Denmark, Denmark*.
- Andresen, M. A. (2012). Unemployment and crime: A neighbourhood-level panel data approach. *Social Science Research*, 41(6), 1615–1628.
- Ang, J. B. (2010). Finance and inequality. *Southern Economic Journal*, 76(3), 738–761.

- Anwer, M., Nasreen, S., & Shahzadi, A. (2015). Social and demographic determinants of crime in Pakistan: A panel data analysis of province Punjab. *International Journal of Economics*, 3, 440–447.
- Aric, H. (2007). Socio-economic theories of crime. *Capela University, Spring*.
- Arif, I., Jawaid, S. T., & Iqbal, S. (2017). Dynamics of Homicide Rates in Asian Countries: A Quantitative Study. *Abasyn University Journal of Social Sciences*, 10(1).
- Arvanites, T.M & Defina, R. H. (2006). Business cycle and street crime. *Criminology*, 4(1), 139–164.
- Asongu, S., & Kodila-Tedika, O. (2016). Fighting African conflicts and crimes: which governance tools matter?. *International Journal of Social Economics*, 43(5), 466–485.
- Asongu, S. A. (2012). Bank efficiency and openness in Africa: Do Income Levels Matter? *The Review of Finance and Banking*, 4(2), 115–122.
- Awe, A.A. & Rufus, O. O. (2012). Determinants of income distribution in the Nigeria economy: 1977-2005. *International Business and Management*, 5(1), 126–137.
- African Development Bank, (2016). African Economic Outlook. [online] Available at: [https://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/AE\\_O\\_2016\\_Report\\_Full\\_English.pdf](https://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/AE_O_2016_Report_Full_English.pdf) [Accessed 12 August. 2020].
- Baharom, A. H., & Habibullah, M. S. (2009). Crime and income inequality: The case of Malaysia. *Journal of Politics. & Law.*, 2, 55.
- Bahmani-Oskooee, M., & Gelan, A. (2008). Kuznets inverted-U hypothesis revisited: a time-series approach using US data. *Applied Economics Letters*, 15(9), 677–681.
- Baligh, N. & Pirae, K. (2013). Financial development and income inequality relationship in Iran. *Middle-East Journal of Scientific Research*, 13, 56–64.
- Bandyopadhyay, S., Bhattacharya, S., & Sensarma, R. (2011). An analysis of the factors determining crime in England and Wales: a quantile regression approach.
- Banerjee, A., Dolado, J., & Mestre, R. (1998). Error-correction mechanism tests for cointegration in a single-equation framework. *Journal of Time Series Analysis*, 19(3), 267–283.
- Barro, J. R. (1991). Economic growth in a Cross-Section of Countries. *Quarterly Journal of Economics*, 407–443.

- Barro, R. J. (2000). Inequality and Growth in a Panel of Countries. *Journal of Economic Growth*, 5(1), 5–32.
- Beck, T., Demirgüç-Kunt, A., & Levine, R. (2007). Finance, inequality and the poor. *Journal of Economic Growth*, 12(1), 27–49.
- Becker, G. S. (1968). Crime and Punishment : An Economic Approach.
- Bengoa, M., & Sanchez-Robles, B. (2005). Does equality reduce growth? Some empirical evidence. *Applied Economics Letters*, 12(8), 479–483.
- Bott, E. (1957). *Family and Social Network: Roles, Norms and External Relationships in Ordinary Urban Families*. London: Tavistock Publications.
- Brown, K. V. (2001). The determinants of crime in South Africa. *South African Journal of Economics*, 69(2), 269–298.
- Brush, J. (2007). Does income inequality lead to more crime ? A comparison of cross-sectional and time-series analyses of United States counties, 96, 264–268.
- Burdett, K., Lagos, R., & Wright, R. (2004). An on-the-job search model of crime, inequality, and unemployment. *International Economic Review*, 45(3), 681–706.
- Celikay, F., & Sengur, M. (2016). Education expenditures and income distribution: an empirical analysis of European countries. *Humanomics*, 32(3), 248–257.
- Chapman, B., Weatherburn, D., Kapuscinski, C. A., Chilvers, M., & Roussel, S. (2004). Unemployment duration, schooling and property crime. Bureau of Statistics and Research (BOSCSAR). *Crime and Justice Bulletin*, 74.
- Choe, J. (2008). Income inequality and crime in the United States. *Economics Letters*, 101(1), 31-33.
- Clark, C. (2015). Capital formation in an economy: In *Meaning, significance and process* (p. 12981).
- Cohen, L. E., & Felson, M. (1979). Social change and crime rate trends: A routine activity approach. *American Sociological Review*, 588–608.
- Cohen, L. E., Felson, M., & Land, K. C. (1980). Property crime rates in the United States: A macrodynamic analysis, 1947-1977; with ex-ante forecasts for the mid-1980s. *American Journal of Sociology*, 86(1), 90–118.
- Coccia, M. (2017). A Theory of general causes of violent crime: Homicides, income inequality and deficiencies of the heat hypothesis and the model of CLASH. *Aggression and Violent Behavior*, 37, 190-200.

- Cömertler, N., & Kar, M. (2007). Socio-economic determinants of crime rate in Turkey: a cross-sectional analysis. *Journal of Ankara*, 62(2), 37–57.
- D., K. (2006). Nigeria in Sanja Tatic (ed) Countries at the Crossroads. New York.
- Demombynes, G., & Özler, B. (2002). Crime and local inequality in South Africa. The World Bank.
- Dritsakis, N., & Gkanas, A. (2009). The effect of socio-economic determinants on crime rates: An empirical research in the case of Greece with cointegration analysis. *International Journal of Economic Sciences and Applied Research*, 2(2).
- Das, S., Sinha, G., & Mitra, T. K. (2010). Regional convergence of growth, inequality and poverty in India—An empirical study. *Economic Modelling*, 27(5), 1054–1060.
- Edmark, K. (2005). Unemployment and crime: Is there a connection?. *Scandinavian Journal of Economics*, 107(2), 353–373.
- Ehrlich, I. (1973). Participation in illegitimate activities: A theoretical and empirical investigation. *Journal of Political Economy*, 81(3), 521–565.
- Ehrlich, I. (1975). On the relation between education and crime. In Education, income, and human behaviour. *Journal of Political Economy*, 81(3), 521–565.
- Elliott, C., & Ellingworth, D. (1996). The relationship between unemployment and crime: A cross-sectional analysis employing the British Crime Survey 1992. *International Journal of Manpower*, 17(6/7), 81–88.
- Entorf, H., & Sieger, P. (2015). Does the magnitude of the link between unemployment and crime depend on the crime level? A quantile regression approach. *International Journal of Conflict and Violence (IJCV)*, 8(2), 262–283.
- Entorf, H., & Spengler, H. (2000). Socioeconomic and demographic factors of crime in Germany: Evidence from panel data of the German states. *International Review of Law and Economics*, 20(1), 75–106.
- Enamorado, T., López-Calva, L. F., Rodríguez-Castelán, C., & Winkler, H. (2016). Income inequality and violent crime: Evidence from Mexico's drug war. *Journal of Development Economics*, 120, 128–143.
- Ewubare, D.B & Okpani, A. (2018). Poverty and Income Inequality in Nigeria. *International Journal of Advanced Studied in Ecology, Development and Sustainability*, 5, 2345–4252.
- Fajnzylber, P., Lederman, D., & Loayza, N. (2002a). What causes violent crime?. , 46(7),. *European Economic Review*, 46(7), 1323–1357.

- Fajnzylber, P., Lederman, D., Loayza, N. (2002b). Inequality and violent crime. *Journal of Law and Economics*, XLV(April).
- Ferreira, F. H. (2001). Education for the masses? The interaction between wealth, educational and political inequalities. *Economics of Transition*, 9(2), 533–552.
- Fougère, D., Kramarz, F., & Pouget, J. (2009). Youth unemployment and crime in France. *Journal of the European Economic Association*, 7(5), 909–938.
- Freeman, C. (2005). *Technical change and unemployment. Working for full employment*. Routledge.
- Gelan, A., & Price, G. N. (2003). African economies and the Kuznets curve: an exploratory investigation. *Applied Economics Letters*, 10(12), 747–751.
- Ghosh, A., Robertson, P. E., & Robitaille, M. C. (2016). Does globalization affect crime? Theory and evidence. *The World Economy*, 39(10), 1482–1513.
- Gillado, M., & Tan-Cruz, T. (2004). Panel Data Estimation of Crime Rates in the. October 4-5. In *9th National Convention on Statistics (NCS) EDSA Shangri-La Hotel*. The Philippines.
- Gimet, C., & Lagoarde-Segot, T. (2011). A closer look at financial development and income distribution. *Journal of Banking & Finance*, 35(7), 1698–1713.
- Gottfredson, M. R., & Hirschi, T. (1990). . A general theory of crime. Stanford University Press.
- Gould, E. D., Weinberg, B. A., & Mustard, D. B. (2002). Crime rates and local labour market opportunities in the United States: 1979–1997. *Review of Economics and Statistics*, 84(1), 45–61.
- Grundler, K. & Scheuermeyer, P. (2015). Income Inequality, Economic Growth, and the Effect of Redistribution, Würzburg Economic Papers, No. 95, Univ., Dep. of Economics, Chair VWL 1, Würzburg.
- Habibullah, M. S., Din, B. H., & Hamid, B. A. (2016). . Good governance and crime rates in Malaysia. *International Journal of Social Economics*.
- Haddad, G. K., & Moghadam, H. M. (2011). The socioeconomic and demographic determinants of crime in Iran (a regional panel study). *European Journal of Law and Economics*, 32(1), 99–114.
- Hamori, S., & Hashiguchi, Y. (2012). The effect of financial deepening on inequality: Some international evidence. *Journal of Asian Economics*, 23(4), 353–359.
- Harriman, T. (2006). *Is there a Future for Democracy in Nigeria? Text of a public lecture delivered at the Monday 5th June*. The U.S.A.

- Human development report Nigeria achieving growth with equity. (2008). [online] Available at: [http://hdr.undp.org/sites/default/files/nhdr\\_nigeria\\_2008-2009.pdf](http://hdr.undp.org/sites/default/files/nhdr_nigeria_2008-2009.pdf) [Accessed 12 August. 2020].
- Human Rights Watch. (2015). [online] Available at: <https://www.hrw.org/worldreport/2016/country-chapters/nigeria> [Accessed 18 Mar. 2017].
- Nuruddeen, T., & Ibrahim, S. S. (2014). An empirical study on the relationship between poverty, inequality and economic growth in Nigeria. *Journal of Economics and Sustainable Development*, 5(26), 20-24.
- Ishak, S., & Bani, Y. (2017). Determinants of Crime in Malaysia: Evidence from the Developed States. *International Journal of Economics & Management*, 11.
- Janine, A., & Elbadawi, I. (1992). *Parallel Markets, the Foreign Exchange Auction, and Exchange Rate Unification in Zambia*.
- Kew, D. (2006). Nigeria in Sanja Tatic (Ed) Countries at the crossroads. *Freedom House, New York*.
- Kelly, M. (2000). Inequality and crime. *Review of Economics and Statistics*, 82(4), 530–539.
- Khan, A. Q., Hafeez, M. H., Saleem, N., & Azam, M. (2018). Exploring the Impact of Financial Development on Inequality: Evidence from Three Asian Countries. *Review of Economics and Development Studies*, 4(2), 341–355.
- Kick, E. L., & LaFree, G. D. (1985). Development and the social context of murder and theft. *Comparative Social Research*, 8, 37–58.
- Kim, D. H., & Lin, S. C. (2011). Nonlinearity in financial development–income inequality nexus. *Journal of Comparative Economics*, 39(3), 310–325.
- Krahn, H., Hartnagel, T. F., & Gartrell, J. W. (1986). Income inequality and homicide rates: Cross-national data and criminological theories. *Criminology*, 24(2), 269–294.
- Krohn, M. D. (1976). Inequality, unemployment and crime: A cross-national analysis. *The Sociological Quarterly*, 17(3), 303–313.
- Kuznets, S. (1955). Economic growth and income inequality. *The American economic review*, 1-28., 1–28.
- Lagrange, H. (2003). Crime and socio-economic context. , 44(5), 29-48. *Revue Française de Sociologie*, 44(5), 29–48.
- Lauridsen, J. (2009). Is Baltic crime economically rational? *Baltic Journal of Economics*, 9(1), 31–38.



- Lee, D. Y., & Holoviak, S. J. (2006). Unemployment and crime: an empirical investigation. *Applied Economics Letters*, 13(12), 805–810.
- Lee, Y. D. (2002). *Income inequality and crime: Cointegration analysis and causality tests*. Working paper.
- Li, S., McAfee, C., & Phadke, G. (2016). The Effect of Income Inequality on Crime. *Econometric Analysis of Undergraduate Research Papers* [97] <http://hdl.handle.net/1853/54740>
- Levitt, S. D. (2001). Alternative strategies for identifying the link between unemployment and crime. *Journal of Quantitative Criminology*, 17(4), 377–390.
- Lochner, L., & Moretti, E. (2004). The effect of education on crime: Evidence from prison inmates, arrests, and self-reports. *American Economic Review*, 94(1), 155–189.
- Maddah, M. (2013). The effect of unemployment and income inequality on crimes, a time series analysis. *International Journal of Economics Research*, 4(2), 37–42.
- Malinen, T. (2012). Estimating the long-run relationship between income inequality and economic development. *Empirical Economics*, 42(1), 209–233.
- Messner, S. F., & Blau, J. R. (1987). Routine leisure activities and rates of crime: A macro-level analysis. *Social Forces*, 65(4), 1035–1052.
- Mocan, H. N. (1999). Structural unemployment, cyclical unemployment, and income inequality. *Review of Economics and Statistics*, 81(1), 122–134.
- Mora, T. (2004). Role of mobility in the evolution of disparities: European regions evidence. *Applied Economics Letters*, 11(5), 325–328.
- Morris, R. (2000). Survey of the Literature on the Criminological and Economic Factors Influencing Crime Trends.
- Muller, A. (2002). Education, income inequality and mortality. *BMJ*, 324, 7328.
- Nahum, R. A. (2005). *Income inequality and growth: a panel study of Swedish counties 1960-2000* (No. 2005: 8). Working paper.
- Narayan, P. K., & Smyth, R. (2004). Temporal causality and the dynamics of exports, human capital and real income in China. *International Journal of Applied Economics*, 1(1), 24–45.
- Narayan, P. K. (2005). No Title The saving and investment nexus for China: evidence from cointegration tests. *Applied Economics*, 37(17), 1979–1990.

- National Bureau of Statistics (NBS). (2017). *Social Statistics in Nigeria*. Abuja.
- National Bureau of Statistics (NBS). (2019). *Social Statistics in Nigeria*. Abuja.
- Neopolitan, J. L. (1997). Homicides in developing nations: results of research using a large and representative sample. 41, 358374. *International Journal of Offender Therapy and Comparative Criminology*.
- Neumayer, E. (2003). Good policy can lower violent crime: Evidence from a cross-national panel of homicide rates, 1980–97. *Journal of Peace Research*, 40(6), 619-640.
- Nilsson, A., & Agell, J. (2003). *Crime, unemployment and labour market programs in turbulent times Working Paper*.
- Nilsson, A. (2004). *Income inequality and crime: The case of Sweden* (No. 2004: 6). Working Paper.
- North, D. C. (1990). *Institutions, Institutional Change and Economic Performance*. Cambridge: Cambridge University Press.
- Nigeria Watch (2014), Fourth Report on Violence in Nigeria (2006–2014). [www.nigeriawatch.org/media/html/NGA-Watch-Report14.pdf](http://www.nigeriawatch.org/media/html/NGA-Watch-Report14.pdf)
- Omotor, D. G. (2010). Demographic and Socio-Economic Determinants of Crimes in Nigeria (A Panel Data Analysis). *Journal of Applied Business and Economics*, 11(1), 185–195.
- Onafowora, O., & Owoye, O. (2017). A panel vector AutoRegression analysis of income inequality dynamics in each of the 50 states of the USA. *International Journal of Social Economics*, 44(6), 797–815.
- OECD. 2013. Crisis Squeezes Income and Puts Pressure on Inequality and Poverty: New Results from the OECD Income Distribution Database
- OECD (2015), In It Together: Why Less Inequality Benefits All, OECD Publishing, Paris. [\(replace 2000\)](http://dx.doi.org/10.1787/9789264235120-en)
- OECD (2017), Opportunity for All: Overcoming Educational Inequalities over the Life Course, OECD Publishing, Paris, forthcoming. Update Report 2017 Inclusive Growth.
- Orlando, L. (2003). *Fighting the Mafia and renewing Sicilian culture*. Encounter Books.
- Palaz, S., Senergin, O. and Oksuzler, O. (2013). The effect of differences in educational level on income distribution. *Journal of Entrepreneurship and Development*, 8(2), 119–131.

- Panizza, U. (2002). Income inequality and economic growth: evidence from American data. *Journal of Economic Growth*, 7(1), 25–41.
- Park, D., & Shin, K. (2017). Economic growth, financial development, and income inequality. *Emerging Markets Finance and Trade*, 53(12), 2794-2825.
- Park, K. H. (1996). Educational expansion and educational inequality on income distribution. *Economics of Education Review*, 15(1), 51–58.
- Pesaran, M. H., Shin, Y., & Smith, R. J. (2001). Bounds testing approaches to the analysis of level relationships. *Journal of Applied Econometrics*, 16(3), 289–326.
- Prete, A. L. (2013). Economic literacy, inequality, and financial development. *Economics Letters*, 118(1), 74–76.
- Rangel, L. A., Andrade, J., & Divino, J. A. (2008). Economic growth and income inequality in Brazil: Analyzing the comparable minimum areas. Retrieved March 21, 2009.
- Raphael, S. & R. W.-E. (2001). Identifying the Effect of Unemployment on Crime. *Journal of Law and Economics*, 44(1), 259–830.
- Ranker, A. (2016). Top 20 Largest Economies in Africa 2016. [online] Available at:<http://www.africaranking.com/largest-economies-in-africa/> [Accessed 12/08/2020]
- Shahbaz, M., Loganathan, N., Tiwari, A. K., & Sherafatian-Jahromi, R. (2015). Financial development and income inequality: Is there any financial Kuznets curve in Iran?. *Social Indicators Research*, 124(2), 357-382.
- Samanta, S. K., & Heyse, A. (2006). Income inequality and economic growth in developing countries: an empirical analysis. *Indian Journal of Economics and Business*, 5(2), 243.
- Saridakis, G. (2004). Violent crime in the United States of America: A time-series analysis between 1960–2000. *European J. of Law and Economics*, 18(2), 203–221.
- Saridakis, G. (2011). Violent crime and incentives in the long-run: evidence from England and Wales. *Journal of Applied Statistics*, 34(4), 647–660.
- Saridakis, G., & Spengler, H. (2012). Crime, deterrence and unemployment in Greece : A panel data approach. *The Social Science Journal*, 49(2), 167–174.
- Shahbaz, M. (2010). Income inequality-economic growth and non-linearity: a case of Pakistan. *International Journal of Social Economics*, 37(8), 613–636.

- Snipes, M., Cunha, T. M., & Hemley, D. D. (2012). Unemployment Fluctuations and Regional Suicide: 1980-2006. *Journal of Applied Econ. & Business Research*, 2(2).
- Sirine, M. N. I. F. (2015). Impact of inequalities on economic growth: the case of the developing countries. *Journal of Sustainable Development Studies*, 8(1).
- Sookram, S., Basdeo, M., Sumesar-Rai, K., & Saridakis, G. (2009). A time-series analysis of crime in Trinidad and Tobago. *Universidade de West Indies. Mimeo*, 16.
- Sottilotta, C. E. (2013). *Political stability in authoritarian regimes: lessons from the Arab uprisings*. IAI (No. 1301). Zurich.
- Sylwester, K. (2000). Income inequality, education expenditures and growth. *Journal of Development Economics*, 63(2), 379–398.
- Sylwester, K. (2002). Can education expenditures reduce income inequality? *Economics of Education Review*, 21(1), 43–52.
- Treasurytoday.com. (2014). Nigeria: the giant of Africa | *Treasury Today*. [online] Available at: <http://treasurytoday.com/2014/10/nigeria-the-giant-of-africa-ttcyf> [Accessed 12 August. 2020].
- Thomas, C. (2015). Income Inequality and Economic Development in Latin America: A test for the Kuznets inverted-u curve. *Indian Journal of Economics and Business*, 14(1).
- Ukpere, W. I., & Slabbert, A. D. (2009). A relationship between current globalisation, unemployment, inequality and poverty. *International Journal of Social Economics*, 36(1/2), 37–46.
- UNCTAD. (2012). *World investment report: Towards a new generation of investment policies*. New York and Geneva.
- UNODC. (2009). *World drug report*. New York.
- UNODC. (2013). . *Accounting for security and justice in the post-2015 Development Agenda*.
- UNU-WIDER. (2019). *World Income Inequality Database - WIID*. Washington D.C.
- Usher, D. (1997). Education as a Deterrent to Crime. *Canadian Journal of Economics*, 367–384.
- Utari, G. D., & Cristina, R. (2015). Growth and Inequality in Indonesia: Does Kuznets Curve Hold?. *Journal of Modern Accounting and Auditing*, 11(2), 93–111.

- Van Dijk, J. (2007). Mafia markers: assessing organized crime and its impact upon societies. *Trends in Organized Crime*, 10(4), 39–56.
- Vauclair, C. M., & Bratanova, B. (2017). Income inequality and fear of crime across the European region. *European Journal of Criminology*, 14(2), 221-241.
- Waller, I. (2006). *Less law, more order: The truth about reducing crime*. Greenwood Publishing Group.
- Ward, R., & Carmichael, F. (2001). Male unemployment and crime in England and Wales. *Economics Letters*, 73(1), 111–115.
- Wasserman, S., & Faust, K. (1994). *Social network analysis: Methods and applications (Vol. 8)*. Cambridge university press.
- Watch, N. (2014). *Third Report on Violence (2006-2011)*. Abuja.
- World Economic Forum 2015. Outlook on the Global Agenda. <http://reports.weforum.org/outlook-global-agenda-2015/top-10-trends-of-2015/1-deepening-income-inequality/>
- World Inequality Lab. (2018). World inequality report 2018. Retrieved 15 August 2019 <https://wir2018.wid.world/executive-summary.html>
- World Bank (2005), World Development Report 2006: Equity and Development, World Bank, Washington, DC.
- World Bank. (2017). *World Development Indicators*. Washington D.C
- World Bank. (2020). *World Development Indicators*. Washington D.C
- World Bank. (2020). *Worldwide Governance Indicators*. Washington D.C
- Weatherburn, D. (2001). What causes crime?. BOCSAR NSW Crime and Justice Bulletins, 11.
- Winter, H. (2001). *The Economics of Crime: An introduction to rational crime analysis*. Routledge.
- Yang, J., & Qiu, M. (2016). The impact of education on income inequality and intergenerational mobility. *China Economic Review*, 37, 110–125.
- Younsi, M., & Bechtini, M. (2020). Economic Growth, Financial Development, and Income Inequality in BRICS Countries: Does Kuznets' Inverted U-Shaped Curve Exist?. *Journal of the Knowledge Economy*, 11(2), 721-742.
- Younsi, M., & Bechtini, M. (2018). Economic Growth, Financial Development and Income Inequality in BRICS Countries: Evidence from Panel Granger Causality Tests. <https://mpira.ub.uni-muenchen.de/id/eprint/85182>

Zhang, Q., & Chen, R. (2015). Financial development and income inequality in China: An application of the SVAR approach. *Procedia Computer Science*, 55, 774-781.



## BIODATA OF STUDENT

Garba Mohammed Guza was born to the family of Alhaji Muhammad Guza (LATE) Wazirin Potiskum, Yobe State, Nigeria. He attended Army Children Primary School Potiskum and Government Unity College Nguru where he obtained primary school certificate and West African Senior School Certificate (WASSC) respectively. He proceeded to Universal College of Technology, Ile-Ife, Osun State, where he obtained National Diploma (ND) in Business Administration. He later proceeded to the University of Maiduguri, Borno State, Nigeria where he obtained Bachelors of Science Degree (B.Sc) in Economics. Currently a Master of Science Degree (MSc) student at the School of Business and Economics (formerly Faculty of Economics and Management) Universiti Putra Malaysia, Malaysia.





**UNIVERSITI PUTRA MALAYSIA**

**STATUS CONFIRMATION FOR THESIS / PROJECT REPORT AND COPYRIGHT**

**ACADEMIC SESSION :** First Semester 2020/2021

**TITLE OF THESIS / PROJECT REPORT :**

DETERMINANTS OF INCOME INEQUALITY AND THEIR IMPACT ON VIOLENT CRIME IN NIGERIA

**NAME OF STUDENT:** GARBA MOHAMMED GUZA

I acknowledge that the copyright and other intellectual property in the thesis/project report belonged to Universiti Putra Malaysia and I agree to allow this thesis/project report to be placed at the library under the following terms:

1. This thesis/project report is the property of Universiti Putra Malaysia.
2. The library of Universiti Putra Malaysia has the right to make copies for educational purposes only.
3. The library of Universiti Putra Malaysia is allowed to make copies of this thesis for academic exchange.

I declare that this thesis is classified as :

\*Please tick (v )

**CONFIDENTIAL**

(Contain confidential information under Official Secret Act 1972).

**RESTRICTED**

(Contains restricted information as specified by the organization/institution where research was done).

**OPEN ACCESS**

I agree that my thesis/project report to be published as hard copy or online open access.

This thesis is submitted for :

**PATENT**

Embargo from \_\_\_\_\_ until \_\_\_\_\_  
(date) (date)

**Approved by:**

\_\_\_\_\_  
(Signature of Student)  
New IC No/ Passport No.:

Date :

\_\_\_\_\_  
(Signature of Chairman of Supervisory Committee)  
Name:

Date :

[Note : If the thesis is **CONFIDENTIAL** or **RESTRICTED**, please attach with the letter from the organization/institution with period and reasons for confidentially or restricted. ]