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Comparative Analysis on Crime Against Persons and Property in Nigeria

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Abstract

Crimes is an act that causes pain to people in every society which results in the feelings of insecurity among people of a specific society. Nowhere is immune of crime, not in the city nor in rural areas, crime coexist with man. Government and NGO's are on their toes to protect lives and properties always. The aim of this study is to make comparative analysis on crime against persons and properties in Nigeria use three statistical method. The three statistical methods used in this study to carry out analyse are multiple regression, hierarchical regression and structural equation modelling. The results generated from three (3) multivariate techniques used in this research shows goodness of fit, meaning our models are good to predict good relationship between the dependent and independent variables. Similar conclusions were reached among the 3 methods. Crime against persons appears to be more serious than crime against properties. Unemployment, low school enrolment and past conviction are significant contributor to crime.

Background to the Study

Crime can be defined as any behaviour that violates the law; it is an action or inaction that is punishable by law; the relationship between criminal activity and the socioeconomic advancement of a society cannot be disputed; crime is an illegal act that is punishable by the state or another authority. It is typically seen as the result of a variety of circumstances, including family, social, cultural, and economic (Igbinedion, 2017). Crime is an act that is harmful not only to an individual but also to a community, society, or the state as a public wrong. Crimes always create distortions and discomfort in every society which results in the feelings of insecurity among people of a specific society according to Khan, (2015).

The two most mentioned economic and socioeconomic problems in recent times are crime and unemployment. Crime coexists with humans, but in the modern period, its trends, patterns, and effects are more concerning and destructive (Ahmad & Ukasha 2021). Concern over the slightly rising trends in violent crimes in Nigeria has grown in recent decades. For instance, there were 1,629 murders in 1994, which is an obvious example of a violent crime. After rising gradually to 2,120 in 2001, the number reached a record high of 2,136 in 2003, according to CLEEN Foundation (2007). A total of 2,044 armed robberies were reported in 1994, according to statistics. In fewer than ten years, it grew by 52% to reach 3,889 in 2002. Crimes include motor vehicle thefts, arson, burglaries, robberies, murders, and victimless crimes. Among the other offences are bank fraud, credit card fraud, tax evasion, insurance fraud, computer fraud, and cell phone fraud. Like the majority of African nations, Nigeria faces insecurity issues like terrorism, insurgency, and ethno-religious conflict, with violent crimes like rape, cattle rustling, kidnapping, and armed banditry being the most concerning.

According to Abdullahi & Mukhtar, (2022) armed banditry in northwestern Nigeria posing serious security challenge leading to the loss of lives and properties, increased fear of crime, affected agricultural development as well as general economic wellbeing of Nigeria. Criminologists and security practitioners in Nigeria in the time channeled their energy and resources to combat crime and insecurity in the urban areas than rural areas. Today insecurity in rural areas has manifests in more dangerous pattern involving kidnapping for ransom and ruthless attacks. As such, many locals have been sent out of their homes to Internally Displaced Persons' (IDPs) camps (Ladan,2019). Factors responsible for Crimes and insecurity in rural Nigeria, are ungoverned spaces, youth unemployment, illiteracy, inadequate security, presence of forest/hideout. (Ahmad & Ukasha 2021). The result of so many studies indicated that criminality has touched almost all the sectors of the country. It has even not spared the bureaucrats, politicians, religious preachers and law executors. Both foreigners and Nigerians alike now experience constant terror while going about their daily lives. Nowhere is safe, not in the city nor in rural areas. Recovering from the anguish that insecurity has caused them is proving to be tough for many families, friends, and loved ones (Davidson, 2010). Several federal, state administrations and NGOs as their responsibility have attempted to protect life and properties, but failed, to reduce the threat of crime and instability by using various tactics to restore farmer's confidence and eradicate in its totality the menace constituted by bandits (Onwunali, Oparandudu, & Ajiji, 2023). Sadly, Nigeria continues to rank low in the Global Peace Index (GPI, 2012) even as huge resources are being channelled to national security (Ewaten & Urhie, 2014).

Every society depends on policing; without it, there would be anarchy and instability. As a result, the police are set up and authorised to carry out security-related tasks in practically every country in the world. A number of police departments have been set up to deal with the annoyance of crime. The Nigeria Police Force (NPF) is the most well-known and prominent law enforcement organisation in Nigeria. According to the Nigeria Police Act, 2020 as modified, among other duties, the NPF is tasked with maintaining law and order, preventing and controlling crime, and protecting people and property. In 2024, Ukasha and Ahmad said One of the most important requirements for the continuation of peaceful living and the survival of a people is the security of persons and property. As a result, this duty has been given to the police. However, the 21st century's criminal patterns have undermined traditional policing models, necessitating the adoption of a new policing model, embodied in the electronic policing system, by police forces worldwide (Nwosu, 2024).

Clearly, crime and its associated causes are multi-facet and multivariate in nature, thus it is more difficult to use the conventional methods to model or analyse crime and its causes. In other to examine and analysis this problem of crime properly some statistical methods are employed, some of these techniques to be used for this assessment are hierarchical regression model, structural equation model and multiple regression model. These methods are employed because the research intents to establish relationships between the variables and to see which variable predict the dependant variable as well as its influence on the prediction. The methods adopted share the same assumptions. Also, the methods were adopted because the research also aim to determine the impact of population density (PD), poverty head count (PHC), past conviction (C), school enrolment (SE), unemployment rate (UR) and number of policemen (NP) on crime against persons and properties (CP) in Nigeria. The proxies for the independent variable are more than one, hence the need to adopt multiple regression to test the impact of the independent variable on the dependent variable. These methods will help in model specification, model identification, parameter estimation, model evaluation, and model modification.

The main aim of this study is to make comparative analysis on crime against persons and properties in Nigeria use three statistical methods.

Scope of the Study

The data for this study is from official statistics of the national bureau of statistics NBS, the data are obtained from the 36 states of Nigeria and the federal capital territory. This research will only cover the cases reported cases from 2001 to 2017 only, also the variables considered as causes of crimes are population density, poverty head count, past conviction, school enrolment, unemployment rate, number of policemen. Information about the forgoing causes of crimes will be used to draw conclusion and the conclusion will be based on the data collected from the 36 states and Abuja.

Methodology

Multivariate analysis is also used to test the join effects of two or more variables upon a dependent variable. Different multivariate techniques can be used to predict a dependent variable from a set of independent variables.

Multiple Regression

Multiple regression is use when you have three or more measurement variables. One of the measurement variables is the dependent (Y) variable. The rest of the variables are the independent (X) variables.

Multiple Regression Model

The purpose of a multiple regression is to find an equation that best predicts the Y variable as a linear function of the X variables.

The multiple regression model is given by

$$Y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \cdots + \beta_p x_p + \varepsilon \qquad (1)$$

For the purpose of this study, the independent variables (X_i) used to predict the dependent variables (Y) in this paper are:

PD= (X_1), NP= (X_2), PHC=(X_3), SE=(X_4), UR=(X_5), C=(X_6) and the dependent variable(Y) is CPR and CP. The model in equation 2 above now becomes:

$Y= \beta_0 + \beta_1 (PD) + \beta_2(NP) + \beta_3 (PHC) + \beta_4 (SE) + \beta_5(UR) + \beta_6(C)$

Where:

Y is the value of the Dependent variable (CP) i.e. what is being predicted or explained

β_0 is the Constant or intercept

β_1 is the Slope (Beta coefficient) for X_1

X_1 First independent variable that is explaining the variance in Y which is Population Density (PD)

β_2 is the Slope (Beta coefficient) for X_2

X_2 Second independent variable that is explaining the variance in Y that is Number of Policemen (NP)

β_3 is the Slope (Beta coefficient) for X_3

X_3 third independent variable that is explaining the variance in Y that is Poverty Head Count (PHC) by state.

β_4 is the slope (Beta coefficient) for X_4

X_4 fourth independent variable that is explaining the variance in Y that is School Enrolment (SE)

β_5 is the slope (Beta coefficient) for X_5

X_5 fifth independent variable that is explaining the variance in Y that is Unemployment Rate (UR)

β_6 is the slope (Beta coefficient) for X_6

X_6 sixth independent variable that is explaining the variance in Y that is Conviction (C)

A better goodness of fit measure is the adjusted R2, which is computed as follows:

$$Adjusted R^2 = 1 - \frac{n-1}{(n-p-1)}(1-R) \qquad (2)$$

The overall goodness of fit of the regression model (i.e. whether the regression model is at all helpful in predicting the values of Y can be evaluated, using an F-test in the format of analysis of variance.

Hierarchical Multiple Linear Regression Analysis

Hierarchical regression can be useful for evaluating the contributions of predictor variable above and beyond previously entered predictor variables as a means of statistical control, and for examining incremental validity. Hierarchical regression is a sequential process involving the entry of predictor variables into the analysis in steps. The order of variable entry into the analysis is based on theory. Instead of letting a computer software algorithm "choose" the order in which to enter the variables, these order determinations are made by the researcher based on theory and past research.

The mathematical equations below represent two "blocks" of a hypothetical hierarchical linear regression in which the second equation includes the original predictor variables from the first equation along with an added predictor variable (Tabachnick & Fidell, 2013).

$$\gamma = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \varepsilon_{ij} \quad (3)$$

$$\gamma = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon_{ij} \quad (4)$$

Hierarchical regression is an appropriate tool for analysis when variance on a criterion variable is being explained by predictor variables that are correlated with each other (Pedhazur, 1997). Since correlated variables are commonly seen in social sciences research and are especially prevalent in educational research, this makes hierarchical regression quite useful. Hierarchical regression is a popular method used to analyse the effect of a predictor variable after controlling for other variables. This "control" is achieved by calculating the change in the adjusted R^2 at each step of the analysis, thus accounting for the increment in variance after each variable (or group of variables) is entered into the regression model (Pedhazur, 1997).

Structural equation Modelling (SEM)

Structural equation modelling (SEM) is a methodology for representing, estimating, and testing a network of relationships between variables (measured variables and latent constructs) (Diana Suhr, n. d.). It is a comprehensive statistical approach to testing hypotheses about relations among observed and latent variables (Hoyle, 1995). It is a methodology for representing, estimating, and testing a theoretical network of (mostly) linear relations between variables (Rigdon, 1998). SEM can be used to test hypothesized patterns of directional and no directional relationships among a set of observed (measured) and unobserved (latent) variables (MacCallum & Austin, 2000).

The two main goals in SEM are as follows:

(i) One of the intentions of SEM is to understand the patterns of correlation/covariance among a set of variables and

(ii) Also, to explain as much of their variance as possible with the model specified (Kline, 1998).

The purpose of the model, in the most common form of SEM, is to account for variation and covariation of the measured variables (MVs). Path analysis (e.g., regression) tests models and relationships among MVs. Confirmatory factor analysis tests models of relationships between latent variables (LVs or common factors) and MVs which are indicators of common factors. Latent growth curve models (LGM) estimate initial level (intercept), rate of change (slope), structural slopes, and variance. Special cases of SEM are regression, canonical correlation, confirmatory factor analysis, and repeated measures analysis of variance (Kline, 1998). (Diana Suhr, n. d.)

Data Analysis and Result

Summarize Descriptive Statistics

Table 1: Summarize descriptive statistics of crime against property, crime against persons, population density, number policemen, poverty headcount by state, school enrolment, unemployment rate, conviction.

Variable	Obs	Mean	Std. Dev	Min	Max
Crime against property	37	34610.51	81891.78	2538	500089
Crime against persons	37	67928.84	218349.2	5730	1348675
Population density	37	6.93e+07	3.16e+07	2.71e+07	1.64e+08
Number of policemen	37	112893.2	51857.57	43291	335924
Poverty headcount	37	100932.9	19302.03	71736	156733
School enrolment	37	1.02e+07	5387986	4131450	3.02e+07
Unemployment rate	37	260.9545	90.05694	123.9649	565.3035
Conviction	37	19975.3	12964.75	5553	79944

Source: Output of Stata 12.0

The above is the summary statistics of our data, it shows that the total observation for this is 37 (the number of states in Nigeria). And averages for the variables under consideration are as indicated above, the result show that crime against persons (67928.84) is more perpetuated compare to crime against property (34610.51) across the state in Nigeria. The average conviction across the state is 19975.3 within the period under consideration.

Figure 1: Conviction Rate

Figure 2: Number of Policemen

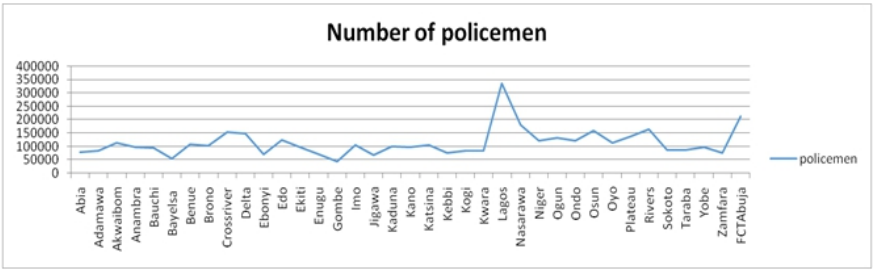


Figure 3: School Enrolment

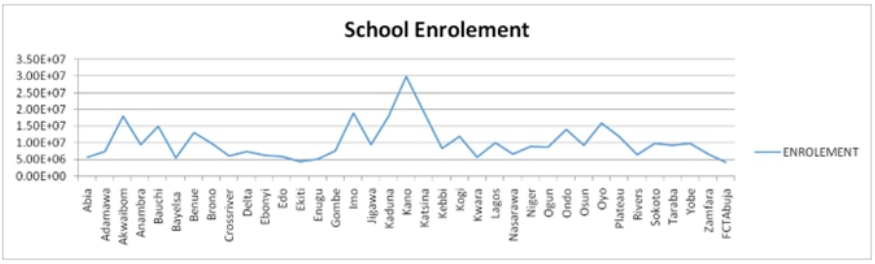


Figure 4: Population Density

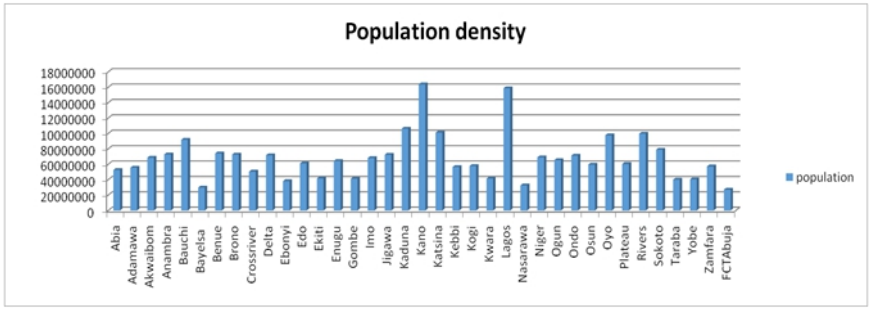


Figure 5: Poverty Headcount by State

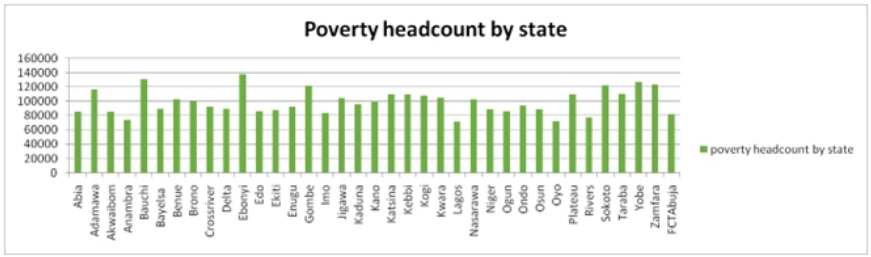


Figure 6: Unemployment Rate

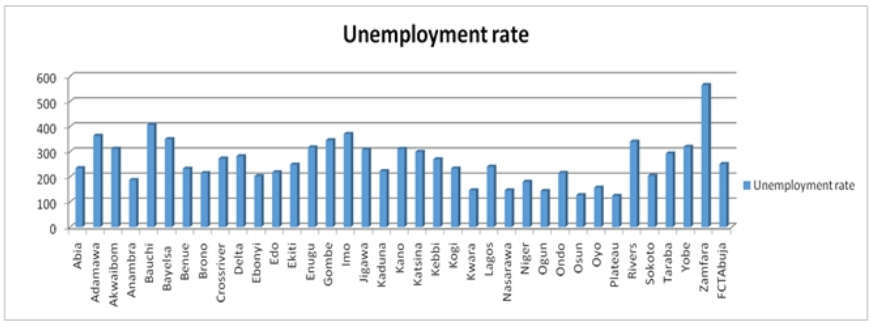


Figure 7: Crime against Property

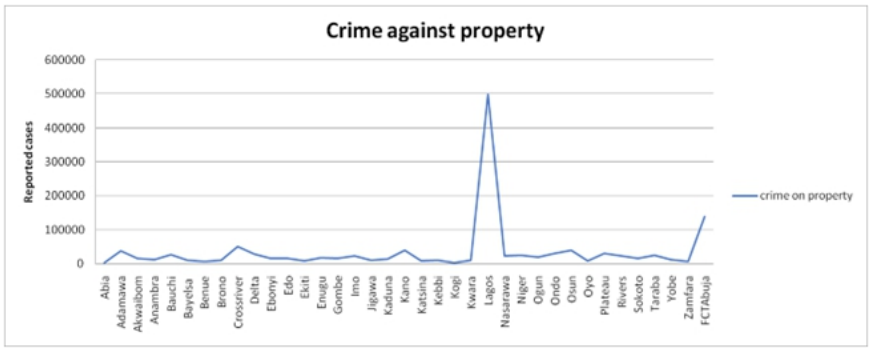
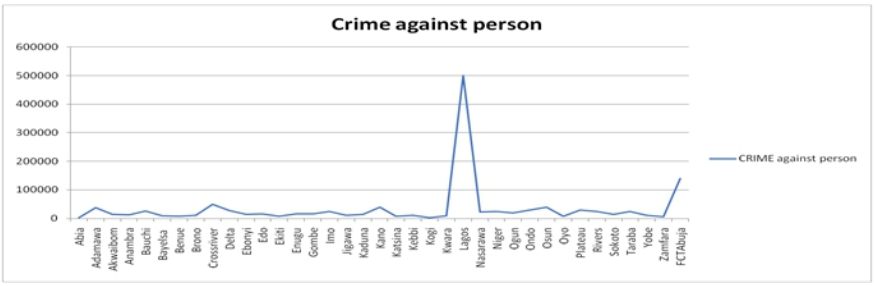


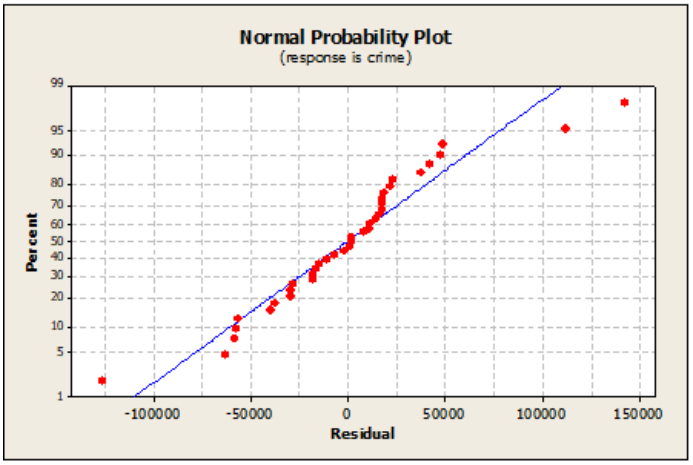
Figure 8: Crime Against Person



The above graphs of all the indices under consideration shows that Lagos state is leading or are tops in all except for poverty and unemployment. Abuja is next to Lagos state in terms of crimes committed against persons and crime against properties. Zamfara state, in terms of unemployment rate is tops. On the average the northern states are leading in poverty head count. Lagos state is next to Kano state as the most populate states in Nigeria. Yobe state has least cases reported of crime against person and properties.

Assumption

Figure 9: Normal probability plot



Interpretation: This plot shows that the data use for this work is normally distribute, the probability plot **S** shape is a good attribute to confirming normally in the data. This also means that one of the assumptions of regression is met.

Table 2: Multicollinearity Test

Model		Collinearity Statistics	
		Tolerance	VIF
	(Constant)		
	Conviction	.757	1.321
	Unemployment	.772	1.295
	Enrolment	.905	1.105
	Policemen	.701	1.426
	Population	.964	1.037
	Poverty	.860	1.162

Interpretation: From the Collinearity Statistics on the table (Table 2) above, since the tolerance values > .10 and VIF < 10.0, it means there is no Multicollinearity

K-S test of same sample (One-Sample Kolmogorov-Smirnov Test)

	Population	Police men	Poverty headcount	School enrolment	Unemploy ment rate	Conviction
N	37	37	37	37	37	37
Kolmogorov-Smirnov Z	1.195	1.065	.621	1.266	.521	1.220
Asymp. Sig. (2-tailed)	.115	.207	.835	.081	.949	.102

Interpretation: The Kolmogorov-Smirnov Test indicated all the variables considered follows a normal distribution since all their p-values are greater than 0.05

Table 3: Test for Randomness

Runs Test								
	Crime against property	Crime against persons	Population	Policemen	Poverty headcount	School enrolment	Unemployment rate	Conviction
Asymp. Sig. (2-tailed)	0.996	0.507	1.000	0.319	0.315	0.183	0.096	0.180
a. Median (cut point)								

Interpretation: The run test result in the above table shows that there exists randomness in the data cutting across the whole variables.

Multiple Regression

Table 4: Regression result of crime against property on population density, number policemen, and poverty headcount by state, school enrolment, unemployment rate, conviction

Crime against property	**Coef.**	**Std. Err.**	**T**	**P>|t|**
Population density	.0001655	.0003933	0.42	0.677
Number of policemen	.994713	.1832213	5.43	0.000
Poverty headcount	.293687	.3757045	0.78	0.441
School enrolment	-.0018474	.0017666	-1.05	0.304
Unemployment rate	86.61304	80.67414	1.07	0.022
Conviction rate	2.360189	.8857159	2.66	0.012
Constant	-169635.7	54775.48	-3.10	0.004

Source: Output of Stata 12.0

Interpretation

The regression result was computed at 95% level of significance and the total observations are 37 which is our sample size and they are representing the 36 states and the FCT. The result above shows that crime against property (dependent variable) is regressed against predictor variables. F – Statistics $F(6, 30) = 20.68$ The Prob >F = 0.0000 indicate significance which means the overall predictor variables explain our response variable which is crime against property. This also means there exist a significant relationship between the predictor variables and the response variable which is crime against property. From the results also, the coefficient of determination R square (R^2) which measures the goodness of fit of the model was statistically high at 0.8053. It shows that about 81 percent of the total variance on the dependent variable (crime against property) was explained for, by the independent variables. Below is the regression model of crime against property and the predictor variables under

consideration. Except for school enrolment all the predictor variables have positive relationship with the respondent variable (Crime against property).

Crime against property = - 169636 + 0.0001655 population density + 0.995 number of policemen + 0.294 poverty headcount by state - 0.00185 school enrolment + 86.6 unemployment rate + 2.36 conviction

Considering our model population density as predictor variable with coefficient 0.0001655 holding all other variables constant will increase crime against property by 0.0166% with a unit increase. With one-unit increase in the number of policemen holding all other variable constant will forestall crime against property by 99.5%. For every one-unit increase in poverty, crime against property will increase by about 30%. Base on the regression model school enrolment has coefficient of -0.00185 which means deficiency in school enrolment will increase crime against property for every one unit change with every other variable held constant.

The regression model also shows that with one-unit increase in unemployment rate crime against property will increase by 86.6 units. Unemployment rate should be tackled to guide against increase in crime. Pass conviction rate has a positive relationship with crime against property every one unit change in conviction crime against property will change by 2.36 units.

The p-value of the t-test shows that the individual variables that have contributed significantly to crime against property are unemployment rate, number of policemen and pass conviction.

Table 5: Regression of crime against persons and population density, number of policemen, poverty headcount by state, school enrolment unemployment rate, conviction.

Crime against persons	Coef.	Std. Err.	t	P>|t|
Population density	.0008464	.0011335	0.75	0.461
Number of policemen	2.080774	.5279773	3.94	0.000
Poverty headcount	6286001	1.082644	0.58	0.566
School enrolment	-.0064215	.0050908	-1.26	0.217
Unemployment rate	146.7908	232.4737	0.63	0.033
Conviction	7.601689	2.552312	2.98	0.006
constant	-413495.8	157843.1	-2.62	**0.014**

Source: Output of Stata 12.0

Interpretation: The result above shows that crime against persons (dependent variable) is regressed against predictor variables. The regression model is computed 95% significance level. The Prob> F = 0.0000 shows the significance of the F-value. The value of the F – Statistics which measures the overall significance of the model is high at 16.99 which mean it is large enough and significant for the predictor variables jointly to explain the response

variable in the model. While the value of the t–statistics, corresponding to each of the coefficients were equally statistically significantly high to show the strength of the independent variables on the dependent variables.

R squared tells about variability in the model by 77% this also indicates that our model is good, meaning that our model has a good fit. The predictors' variables in the model explain very well the crime against person

Crime against persons = - 413496 + 0.00085 population density + 2.08 number of policemen + 0.63 poverty headcount by state - 0.00642 school enrolment + 147 unemployment rate + 7.60 conviction

The model above shows that all the predictor variables except for school enrolment indicate positive relationship with the response variable. Population density as predictor variable with coefficient unit 0.00085 will increase crime against person by 0.085% for every one-unit increase in population given that all other variables are held constant. 2.08 is the coefficient of number of policemen, this means that for every one-unit increase in the number of policemen crime against person will be reduce by 200% when all other variable is held constant. It will be important to increase the number of police men to reduce crime.

Poverty headcount by states increase crime against person by 63% for every 1-unit change poverty when the other entire variables are held constant. It is obvious by our result that poverty is one factor that will increase crime against person it will be necessary to introduce and implement programmes will reduce poverty. Equally the regression result shows that crime against persons would be declining by about 0.642 percent (-0.00642) for every one-unit decline in school enrolment holding all other variables constant. This means that as the improvement in school enrolment will decline crime against person too. Unemployment rate also holding all other variables constant will contribute to overall crime against person by 147 units if people are gainfully employed crime against persons will be drastically reduced. Further, result shows that pass conviction increase crime against persons by 7.60 for every one-unit change holding all other variables constant. So, proper correctional measures should be taken on people ever convicted for crimes to forestall them engaging in crime again. Considering the individual contributions of the predictors' variables to crime against persons, those that contribute significantly are number of policemen (0.000), unemployment rate (0.033) and lastly conviction (0.006)

Hierarchical Regression

Table 6: Summary of Hierarchical Regression Analysis for Variables predicting crime against persons (enrolment, poverty, employment) (conviction, police, population)

Variable	β	t	SE	Prob > F	R^2	Δ R^2
Model 1				0.6242	0.0511	0.0511
Enrolment	-.0000848	-0.27	.0003095			
Poverty	-15.74024	-1.28	12.27553			
employment	-77892.54	-0.08	920536.3			
Cons	2.34e+11	1.54	1.52e+11			
Model 2				0.0000	0.9298	0.879
Enrolment	-.0001366	-0.94	.0001459			
Poverty	4.369861	1.19	3.676867			
Employment	62796.36	0.23	272840.8			
Conviction	200.4802	5.89***	34.04794			
Police	4.925057	3.15**	1.563478			
population	7.41e-07	0.14	5.42e-06			
cons	-1.74e+11	-3.23**	5.41e+10			

*$p < .05$, **$p < .01$, ***$p < .001$

Source: Output of Stata 12.0

R-Square Diff. Model 2 - Model 1 = 0.879 $F(3,30) = 125.241$ $p = 0.000$

Table 7: Summary of change in model for crime against persons

Model	R^2	F(df)	p	R^2 change	F(df) change	p
1	0.051	0.593(3,33)	0.624			
2	0.930	66.263(6,30)	0.000	0.879	125.241(3,30)	0.00**0**

Interpretation: Summary of Hierarchical Regression Analysis for Variables predicting crime against persons show that in model 1 all the 3-variable considered against crime against person have negative relationship it means as school enrolment, unemployment and poverty increases crime against persons will increase. $\mathbf{R^2}$ in the first model is 0.0511 and F-Statistics (Prob > F) the model is not significant. However, after adding variables such as past conviction, number of policemen and population density, the outcome of the model changes. $\mathbf{R^2}$ in the model 2 changed to 0.879 and the model become statistically significant with the F change = $F(3,30) = 125.241$ $p = 0.000$. All the coefficients of the variables become positive except for school enrolments which remain negative. Past conviction and number of policemen significantly contributes to the model.

Table 8: Summary of Hierarchical Regression Analysis for Variables predicting crime against property (enrolment poverty employment) (conviction police population)

Variable	β	t	SE	Prob > F	R^2	Δ R^2
Model 1				0.5879	0.0559	0.0559
Enrolment	-.0000133	-0.31	0.0000424			
Poverty	-2.255725	-1.34	1.683464			
employment	-11313	-0.09	126242.1			
cons	3.41e+10	1.64	2.08e+10			
Model 2				0.000	0.9345	0.879
Enrolment	-.0000165	-0.85	.0000194			
Poverty	.555638	1.14	.4884947			
Employment	16421.03	0.45	36248.6			
Conviction	24.79168	5.48***	4.523482			
Police	.8515193	4.10***	.2077178			
population	6.94e-08	0.10	7.21e-07			
cons	-2.46e+10	-3.43**	7.19e+09			

*$p < .05$, **$p < .01$, ***$p < .001$

Source: Output of Stata 12.0

R-Square Diff. Model 2 - Model 1 = 0.879 F(3,30) = 134.102 p = 0.000

Table 9: Summary of change in model forcrime against property

Model	R^2	F(df)	p	R^2 change	F(df) change	p
1	0.056	0.651(3,33)	0.588			
2	0.934	71.316(6,30)	0.000	0.879	134.102(3,30)	0.000

Interpretation: The result shows that by adding past conviction, number of police and population density to variables in model 1 (enrolment, poverty, employment) the impact on crime against property became significant because the F statistics (Prob > F = 0.5879) changed to Prob > F = 0.0000. Also, the $\mathbf{R^2}$ value increased, the $\mathbf{R^2}$ change (0.879) is significant mean that about 88% of variability is explained by the predictor variables. Past conviction and number of policemen have significant impact on the model. Number of school enrolment has negative relation with crime against properties. Holding all other variables constant unemployment contributes to more to crime against property than any variable.

Structural Equation Model

Table 10: Structural equation model

Structural Crime against property	*Coef.*	*z*	*P>|z|*
Population	.0001655	0.47	0.640
Policemen	.994713	6.03	0.000
Poverty	.293687	0.87	0.385
Enrolment	-.0018474	-1.16	0.246
Unemployment	86.61304	1.19	0.233
Conviction	2.360189	2.96	0.003
_cons	-169635.7	-3.44	0.001

Structural Crime against persons	*Coef.*	*z*	*P>|z|*
Population	.0008464	0.83	0.407
Policemen	2.080774	4.38	0.000
Poverty	.6286001	0.64	0.519
Enrolment	-.0064215	-1.40	0.161
Unemployment	146.7908	070	0.483
Conviction	7.601689	3.31	0.001
_cons	-413495.8	-2.91	0.004

LR test of model vs. saturated: chi2(12) = 84.73, Prob > chi2 = 0.0000

Source: Output of Stata 12.0

Table 11: Equation-level Goodness of Fit

	R^2	mc	mc^2	χ^2	CFI	AGFI	RMSEA	AIC	BIC
Crime/ property	0.8053	.8974	.8053						
Crime / persons	.7726	.8789	.7726S	0.000	0.93	0.95	0.405	7385	7393

mc = correlation between dependent variable and its prediction

mc^2 = mc^2 is the Bentler-Raykov squared multiple correlation coefficient

Source: Output of Stata 12.0

Interpretation of SEM Result: The results on the table show that the models has a good fit, the χ^2 value = (84.73), χ^2 = 0.0000 < prob. indicate significance. CFI= 0.93, AGFI = 0.95, RMSEA= 0.405, AIC = 7385.008, BIC = 7393.063. Also considering the models individual, R-square value of crime against property = 0.805331 (81%) shows that exogenous variables explain 81% variability of endogenous variable. Similarly, for crime against persons R-square value = .7726197 it also means that 77% of variability is explained by exogenous this show that

both models have good fit. These high percentages suggest that the model is effective in explaining a substantial portion of the variation crime against property and person by the exogenous variables. School enrolment has negative relation with both crimes against persons and properties. It means that school enrolment if it decreases crime will decrease.

Discussion and Finding

From the three (3) multivariate techniques use in this research work all confirmed goodness of fit, meaning our models are good. They generated similar models considering same variables leading to same conclusion. The three (3) methods showed that following similar conclusions:

1. In all three approaches, the number of students enrolled in school has a negative correlation with crime against people and property. Keeping all other factors equal, the main driver of crime against people and property across the three approaches is unemployment. This collaborated the study of Khan, Junaid. Muhammad, & Khalid, (2015); Abdullahi & Mukhtar, (2022); Aroh et al., (2010);
   Siro, (2016); Ookli & Lanshie, (2018); Yahya & Bello, (2020) whom have empirically established relationship between youth unemployment and crime or security challenges in all societies. The regression model also demonstrates that there will be an 86.6-unit increase in property crime every unit rise in the unemployment rate. It is important to address unemployment in order to prevent a rise in crime.
2. The number of police officers and prior convictions were statistically significant based on the outcomes of the three approaches. So, increasing number policemen to combat crime is important. Also, good rehabilitation program is necessary for convict so that they won't fall back to crime when integrate back to the community. Abdullahi & Ukasha (2021) in their study reached a similar conclusion and suggested that it should be ensured that their Divisional Police Stations have adequate work force and logistics to secure the rural areas. Therefore, the mere presence of the formal Police will both provide feeling of security to the local people and prevent potential criminals.
3. Poverty based the result obtained contributes to both crime persons and properties this conclusion is aligned with conclusion of Isyaku, Ishaq & Mukhtar (2018) who opined that there is strong relationship between crimes and violence and high rate of poverty in Nigeria
4. All of the approaches' intercept values across the models are negative and statistically significant.
5. In conclusion, each of the three (3) multivariate techniques results reached are leading to same conclusion. Because of the slightly larger coefficients of the variables and the numerous ways in which they interact, crime against persons appears to be more serious than crime against properties this further collaborated their various means.

In terms of crimes against people and crimes against property, Lagos State leads the entire country, followed by Abuja. Zamfara state has the highest unemployment rate in the nation. The northern states top the nation in the average number of people living in poverty. The data

set used for this research is normally distributed and also it possesses the following characteristics; randomness, it's linear and homoscedastic. Results showed the absence of multicollinearity. With the aforementioned, the usage of the three method is justified since they share similar assumptions.

Conclusion

The results generated from three (3) multivariate techniques used in this research shows goodness of fit, meaning our models are good to predict good relationship between the dependent and independent variables. Similar conclusions were reached among the 3 methods, among the major conclusions reached are; Number of school enrolment contributes negatively to crime against both person and properties. Holding all variables constant unemployment is the major contributor to crime against both person and properties in all the 3 techniques used. Unemployment should be tackled to guide against increase in crime. From the test statistics in the 3 techniques past conviction and number of policemen were statistically significant. Crime against persons seems more severe than that of properties the coefficients slightly higher. Lagos state is leading or are tops in all the variables considered except for poverty and unemployment.

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