



ANALYSIS OF POLICE PERSONNEL TO POPULATION GROWTH IN FIVE URBAN LOCAL GOVERNMENT AREAS IN IBADAN METROPOLIS: A PANACEA FOR CRIME FREE ENVIRONMENT

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ABSTRACT: *Policing in the society helps in maintaining public order and safety, and as well sustainable environment. This study analyses the Availability of Police Personnel to Population Growth of Persons in Five Urban Local Government Areas of Ibadan Metropolis, Oyo State, Nigeria with the purpose of determining the ratio of police personnel's to population of persons' as at the first quarter of the year 2023 in the study areas using Malthus Population Growth Model (Exponential Growth Equation). Police personnel's data were acquire from the Police Divisional Headquarters, Eleyele, Ibadan, Nigeria. The geographic coordinates used to depict the distribution of police stations in each of the five urban local government areas was obtained from Grid³ Nigeria and processed using ArcGIS 10.4. The results revealed an accelerated increase in population in the study area. The results from this study however showed that the ratio of police personnel to population of persons does not meet up with the United Nation's recommended ratio of 1:450. Generally, from the results, it showed that with the 2023 estimated population growth of 2,014,279 from 1,343,147 in 2006, and the required number of police personnel compared to the number obtained as at the first quarter of the year 2023 from the police headquarters, as well as the number of police stations available, there is a need for the federal government in collaboration with the state government to take necessary actions and preventive control in the study areas so as to avoid constant criminal activities.*

KEYWORDS: Sustainable Environment, Population Growth, Accelerated Increase, Government Collaboration.



INTRODUCTION

The Nigerian Police Force was created in 1820; before then, there were a number of constituent units with its autonomous police structure (Obirisagbon & Omagie, 2018). This is attested to by the creation of Lagos Police, in 1930, the Calabar Police and Niger Police, Northern Police. The merger of these autonomous units gave birth to the Nigerian Police Force (Obirisagbon & Omagie, 2018). Police can be defined as a body of men and women that are organized principally by the law to perform the functions of law enforcement in the country (Haruna, 2019). In a state, there are many law enforcement agents but the principal one in the criminal justice system in the police (Haruna, 2019). As far as internal security system of any state is concerned, police is constitutionally empowered to maintain internal security of life and property (Aaron, 2017). The police no doubt is the most statutory or constitutional body/organ responsible for the preservation of law and order as well as the protection of an individual in case of the exercise of his/her legal rights within the society (Imobighe, 2003).

Despite the constant restructuring, reformation and reorganization of the Nigerian Police Force from 1930 till date, police officers are not up to 370,000 in a multifaceted country with a projected population of about 300 million and above. These figures show that there is gross insufficient number of police officers considering the 2016 United National projection of 100,000 populations per police office (<https://tribuneonlineng.com/on-inadequate-number-of-police-officers/November 9, 2022>). To meet this standard, Nigeria needs to have an average of 2.5 million police officers across the nation to ensure effective policing. Notwithstanding, the Nigerian Police Force, as the leading law enforcement agency in Nigeria and one of the closest security agencies to the people should not be insufficient if it will be able to maintain law and order as well as internal security. On the other hand, despite its inadequacy, the agency has been classified as one of the most corrupt and inefficient security agencies in Nigeria (<https://tribuneonlineng.com/on-inadequate-number-of-police-officers/November 9, 2022>).

Policing job, perhaps more than any other profession, not only requires absolute professionalism, but also total commitment expected to make the practitioners proactive and efficient. He further stated that it becomes expedient in a multi-ethnic country like Nigeria with increase profiling of crime and peace-threatening activities like kidnapping, ethnic crisis, armed robbery, religious crisis, extra-judicial killing, political violence, and, of recent, the Boko Haram saga. All these could exert much pressure on the personnel of the Nigerian Police (Odedokun, 2015). Yet, the environment of public policing in the country in the last few years, despite the measures put in place by the Federal Government, seems not to have fared better as incidences of crimes, including those of lethal proportions, increased at all corners of the nation (Alemika & Chukwuma, 2004, 14). More worrisome is the seeming lethargic attitude shown over the years by the Federal Government, towards salvaging public policing in the country (Jemibewon, 2003, 13).

There is no dispute that Nigeria territorial integrity has not faced more insecurity challenges as currently faced now (Falana, 2014). Threat to peace in the society may vary from low-level civil disturbance to violence on a large scale or even insurgencies of armed bandits (Adejumo, 2011). Effective security requires that the police with the appropriate state defense apparatus provides inspection on neighbourhood and on the actions of individuals deemed as safety threats, in order to avoid harm and subversion of the country and its institutions



established for the mutual existence of the citizenry (Basiru, 2019). The state of inadequate security in Nigeria is also affected by lack of police answerability to the neighbourhood. The police in Nigeria are not ready to take responsibility for their actions and inactions. Hence, they do not undertake effectual performance of their most important duty of crime deterrence and control. The demand for personal concentration from police and management over police actions in the neighbourhood is also denied (Basiru, 2019).

Aremu (2009) states that one philosophy of policing conceptualized to make the police and the public work intimately for the good of all is community policing. Aremu (2009) further states that community policing is a thought whose time has come and has been viewed as a transformation and a worldview in the way policing is practiced all over the world. The community policing approach is meant to reduce crime rate, decrease police-citizen conflict, lessen pessimism and apathy towards the police, improve police interpersonal relationship, increase positive police attitude towards the public, advance a dynamic flow of communication between the police and the neighbourhood, prepare and enable neighbourhood to distinguish and react to security issues. Some public analysts have called for the creation of state police in Nigeria as a panacea to insecurity in the country (Gurr, 2000).

The essence of community policing, according to Kohnke (1995), is to make an environment of trust, with the goal that individuals feel good strolling their own avenues and think of reporting anything irregular to the police. There is an increase in the comprehension of community members of the services of the police and its dynamic nature in relating to the public. The relationship between the police and members of the community is enhanced and eventually, the satisfaction of people in the community is enhanced while a decrease in crime rate is on the increase (Teacher, 2015).

The affiliation of the Nigerian Police, according to Akpotu (2003), with members of the community from the beginning has been very pitiable (Mbachie, 2005). The relationship existing between the citizens and the police in the assertion of Adesina (2003) is a poor one in Nigeria because they cause disunity which has resulted in losing confidence in them but increased dislike, distrust and hatred. In a crowded environment with a high population rate, crime will be part of the business of the day and without adequate security agents, there will be threat to lives and properties of the citizens.

Tarsi and Tuff (2012) defined population as a group of individuals of the same species living and interbreeding within a given area. Population is the term typically used to refer to the number of people in a single area (<https://en.m.wikipedia.org/wiki/population>). Osikhotsali (2023) defined population as a the complete set of individuals, whether that group comprises a nation or a group of people within a common characteristics. Elizabeth et al. (2021) defined population growth rate as the change in the number of individuals over a specific period of time. WHO (2023) defined population growth rate as the annual average rate of change of the population size for a given country, territory, or geographic area during a specific period. Population projection of Nigeria is important in planning and making sensitive and critical decisions economically, politically, socially, and on the demographic development of the nation (Ekakitie & Ekereke, 2019). However, their study further stated that a nation's policy, culture, education, politics, exploration of natural resources and social activities are influenced by the size and growth of the population. In terms of development and population, Nigerian cities like Ibadan consist of eleven (11) local government area(s) with five (5) in



urban (inner core) and six (6) in peri-rural (outer). Most of the villages and towns invaded by Boko Haram, bandits and kidnapers among other insurgent groups all over the country occurred is a result of the insufficient police personnel to give the required protection to the people during the onslaught.

However, with the current population of Nigeria, the Nigerian Police is yet to give adequate security due to its small number of personnel. In spite of efforts made by the federal government to provide adequate security to the nation, most of the villages and towns have no police officers. Therefore, this study analyses the police personnel ratio to population growth of persons in five urban local government area(s) in Ibadan metropolis, Oyo State, Nigeria for crime prevention using demographic data of police personnel by divisions, 2006 Population, and Malthus Population Growth Model (Exponential Equation) for estimating the Population growth rate as at the first quarter of the year 2023.

MATERIALS AND METHODS

The Study Area

Ibadan is located approximately between 7.37° and 7.67° North of the Equator, and between 3.88° and 4.17° East of the Greenwich Meridian. It is located in the Southwestern part of Nigeria and one of the major urban centres in Nigeria. The city of Ibadan is about 145 kilometers away from Lagos (the former Federal Capital of Nigeria) by road, and about 345 kilometers southwest of Abuja (the current Federal Capital City) as the crow flies (Olowoporoku et al., 2019). The Ibadan metropolitan area covers a total land area of 3,123.30 km², out of which the urban local government areas cover about 463.33 km² (Bolanle & Ayobami, 2018). The five (5) urban local government areas consist of Ibadan North, Ibadan North East, Ibadan North West, Ibadan South East and Ibadan South West. The entire study areas lie at approximately Longitude 3° 52' 47.65"E to 3° 52' 55.85"E and Latitude 7° 23' 55.89"N to 7° 23' 48.96"N. The 2006 provisional census figures put the population of the Urban areas at 1,338,659 (National Population Commission, 2010).

Table 1: Description of 2006 Population for Each Local Government Area

S/No.	Local Government Area	Population as at year 2006-03-21
1	Ibadan North	308,119
2	Ibadan North East	331,444
3	Ibadan North West	154,029
4	Ibadan South East	266,457
5	Ibadan South West	283,098
Grand Total		1,343,147

Source: https://citypopulation.de/en/nigeria/admin/NGA031_oyo/

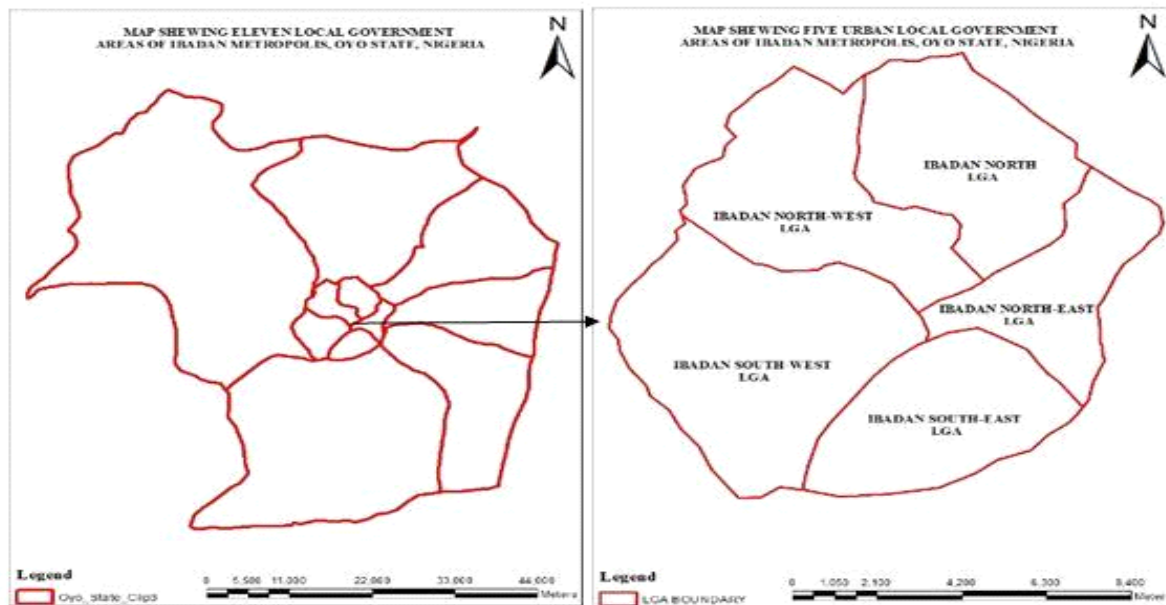


Figure 1: Map of the Study Area(s)

METHODS

The population of persons' as at the first quarter of year 2023 was estimated using Malthus Population Growth Model of 1798. Yan and Ekaka (2011) studied the mathematical model of population system. Augustus et al. (2011) studied about the mathematical modeling of Rwanda's population growth while Ofori et al. (2013) did a study on the mathematical model of the Ghanaian population. 2.41% Nigeria population growth rate was used to estimate population of persons as at the first quarter of the year 2023 for the five urban local government area of Ibadan Metropolis (<https://www.macrotrends.net/countries/NGA/nigeria/population-growth-rate>). Police Personnel's data was acquired from the Police Divisional Headquarters Eleyele, Ibadan, Nigeria based on divisions by Local Government areas under study and data was used to compare the ratio of estimated population of persons as at the first quarter of the year 2023. The Malthus Model is an exponential growth equation model used to determine the population growth rate at an accelerated rate. The spatial geographic coordinates used to depict the distribution of police station in each of the five urban local government area(s) was extracted from Grid³ Nigeria data. The estimated population annual growth rate of the first quarter for the year 2023 was calculated for the five local government area(s) using the formula below:

$$P(t) = P_0 e^{\lambda t}, \dots\dots\dots \text{eq. 1}$$

where P(t) = population as at current year (2023)



Po = initial known population at the year of reference which the population was conducted (2006) for the five local government areas: Ibadan North, Ibadan North East, North West, South East and South West = 308,119, 331,444, 154,029, 266,457, 283,098.

e = Euler's Constant = 2.7

λ = Nigeria Annual Population growth rate at 2023 = (2.41%).
(<https://www.macrotrends.net/countries/NGA/nigeria/population-growth-rate>).

t = future time in years at which projected population is desired (17 years).

Table 1 below presents the population of the five local government areas as at year 2023, as estimated using the Nigeria population growth rate of 2.41%.

Table 2: Demographic Data of Police Personnel by Divisions in the Study Areas (2023)

S/No.	Location By Local Government Areas	Total Number of Police Officers/Personnel	Overall Total No. of Police Officers/Personnel
Ibadan North Local Govt. Area			
1	Bodija Market Division	75	219
2	Bodija Housing Division	44	
3	Sango Division	100	
Ibadan North East Local Govt. Area			
1	Monatan Division	58	234
2	Agodi Division	128	
Ibadan North West Local Govt. Area			
1	Oluyole Division	66	242
2	Iyaganku Division	176	
Ibadan South East Local Govt. Area			
1	Challenge Division	147	206
2	Felele Division	59	
Ibadan South West Local Govt. Area			
1	Oluyole Division	66	213
2	Challenge Division	147	
Grand Total Strength of Personnel			1,114

Source: The Nigerian Police Force Headquarters, Eleyele, Ibadan (2023)

From Table 2 above, it showed three divisions in Ibadan North and two divisions in each of the remaining four local government areas, and also revealed that Ibadan North East and Ibadan North West have the highest number of police personnel, with 234 and 242 respectively compared to the remaining three local government areas.

**Table 3: Geographic Coordinates and Locations of Police Stations**

	Longitude	Latitude	Name of Police Station
	3.919912	7.396578	Agodi Gate Police Station
	3.924927	7.384348	Agugu Police Station
	3.925668	7.424117	Ashi Police Station
	3.886625	7.337432	Felele Divisional Headquarters
	3.901896	7.419212	Housing Police Station
	3.917985	7.395182	Idi Ogungun Police Station
	3.854386	7.401791	Idishin Police Station
	3.88129	7.422892	Ijokodo Police Station
	3.916937	7.415708	Ikolaba Police Station
▶	3.874013	7.383937	Iyaganku Police Station
	3.89769	7.376184	Mapo Police Station
	3.89105	7.400975	Mokola Police Station
	3.929857	7.415587	Oluwo Nla Police Station
	3.85745	7.368394	Oluyole Police Station
	3.899461	7.425009	Sango Police Station
	3.909668	7.408563	Secretariat Police Station
	3.881035	7.388982	Swift Response Squad
	3.929167	7.403211	Testing Ground Police Station
	3.870069	7.337848	The Nigeria Police Division Headquarter Challenge
	3.873583	7.321672	The Nigeria Police Station Toll Gate Ibadan
	3.904754	7.368066	The Nigerian Police Division Headquarters Idi Aro
	3.907313	7.396283	Yemeri Police Station

RESULTS AND DISCUSSION

The results of this study revealed the comparative analysis of police personnel to population growth rate of persons as at first quarter of year 2023. Tables 4-7 and Figures 2-6 present the comparison for the study. Figure 7 shows the position and location of police stations in the study areas. Figures 8-9 present the map queries showing the buffer zone areas of police stations to the residential areas consisting of populated and less populated areas.



Table 4: Result of Comparison of 2006 Population and 2023 Estimated Population in the Study Areas

S/No.	L.G.A	Population 2006	Estimated Population 2023	Diff./Increase in Population
1	Ibadan North	308,119 (20%)	462,077	153,958 (49.967%)
2	Ibadan/N E	331,444 (21%)	497,057	165,613 (49.967%)
3	Ibadan/NW	154,029 (22%)	230,993	76,964 (49.967%)
4	Ibadan S/E	266,457 (18%)	399,598	133,141 (49.967%)
5	Ibadan SW	283,098 (19%)	424,554	144,456 (51.573%)
Grand Total		1,343,147	2,014,279	671,132

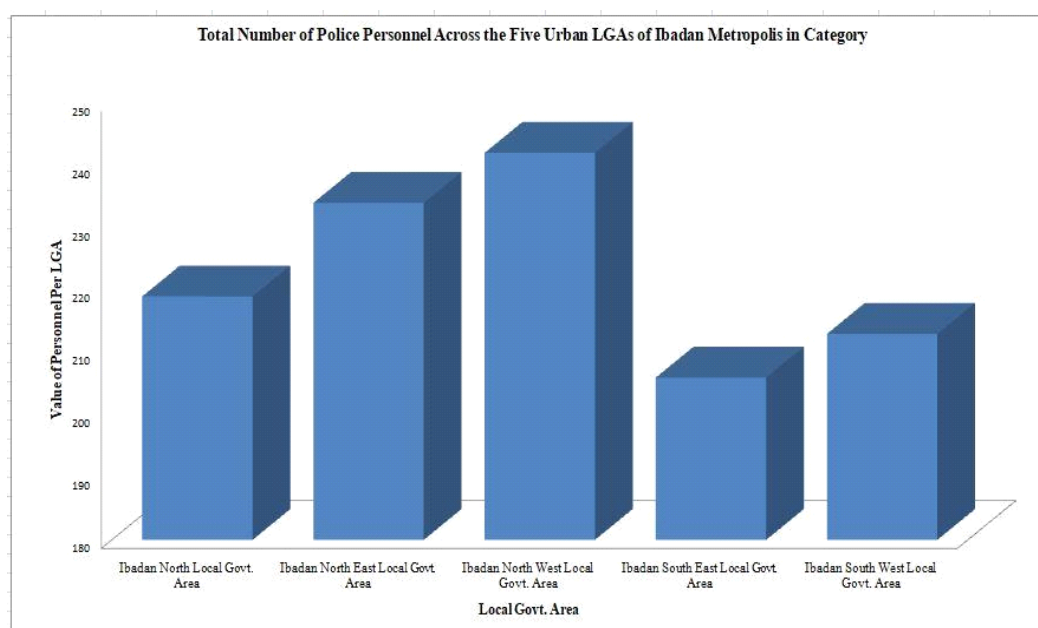
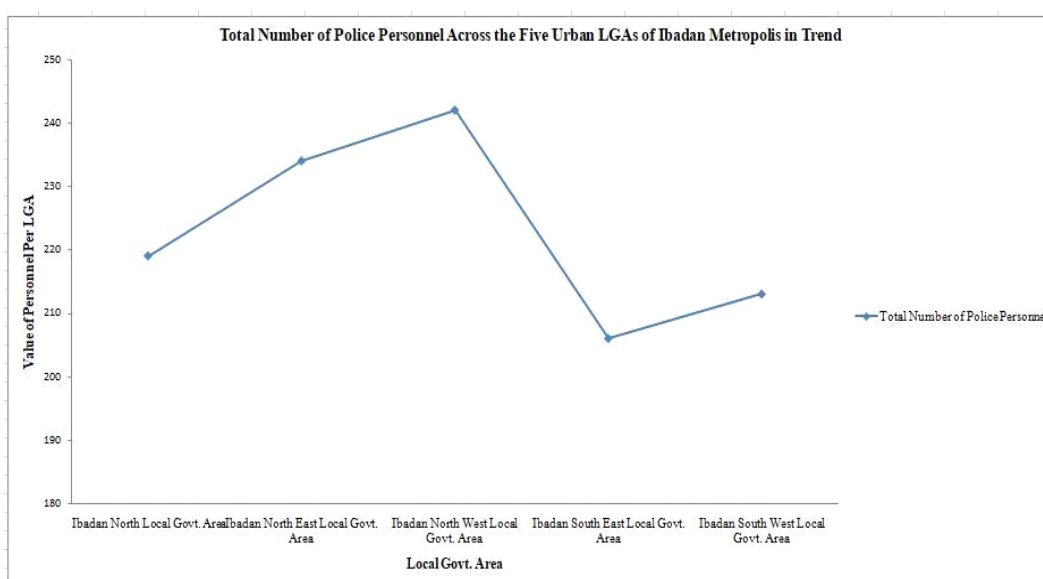


Figure 2: Showing Police Personnel data in Trend and across Category

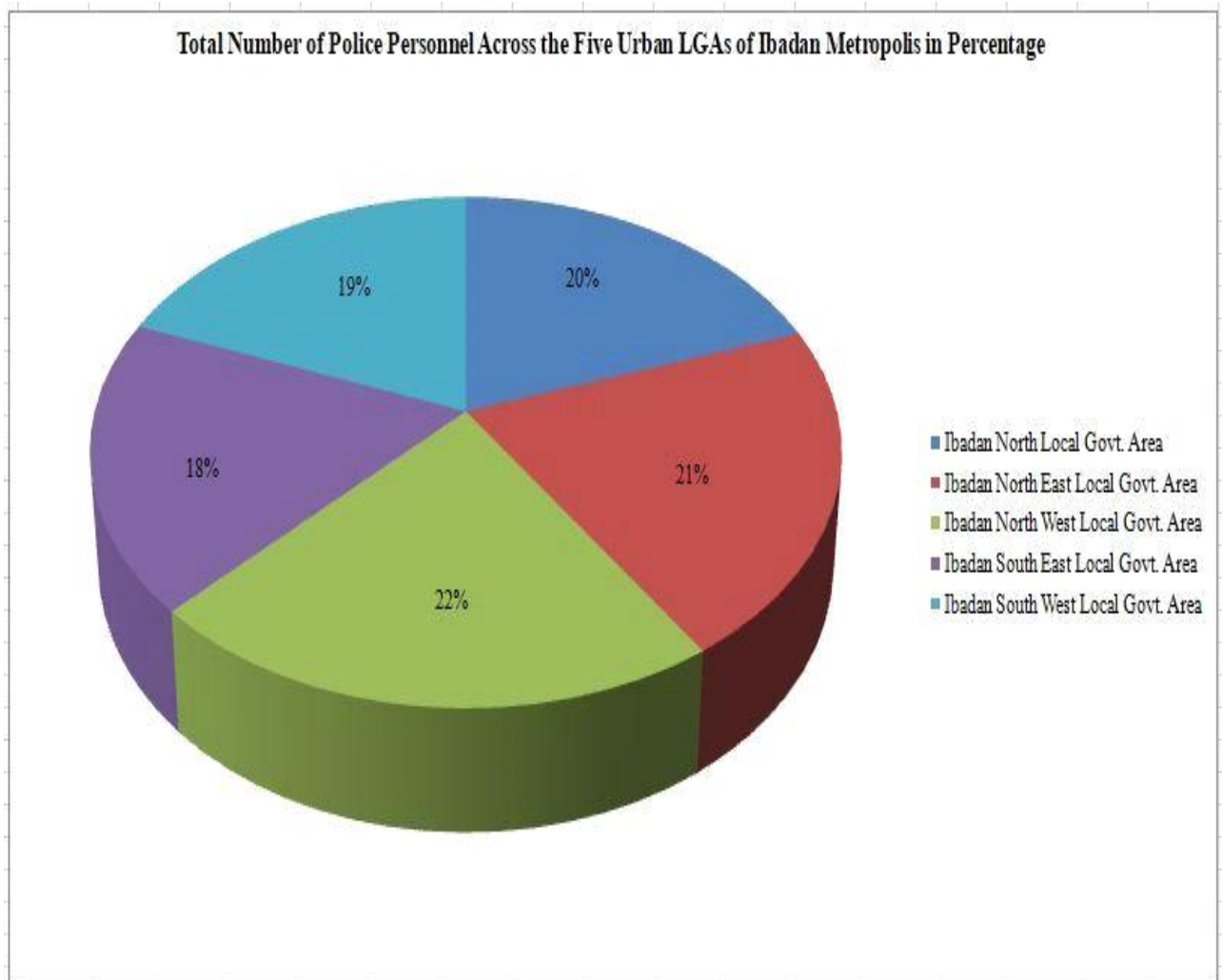


Figure 3: Showing Percentage of Police Personnel in the Study Areas

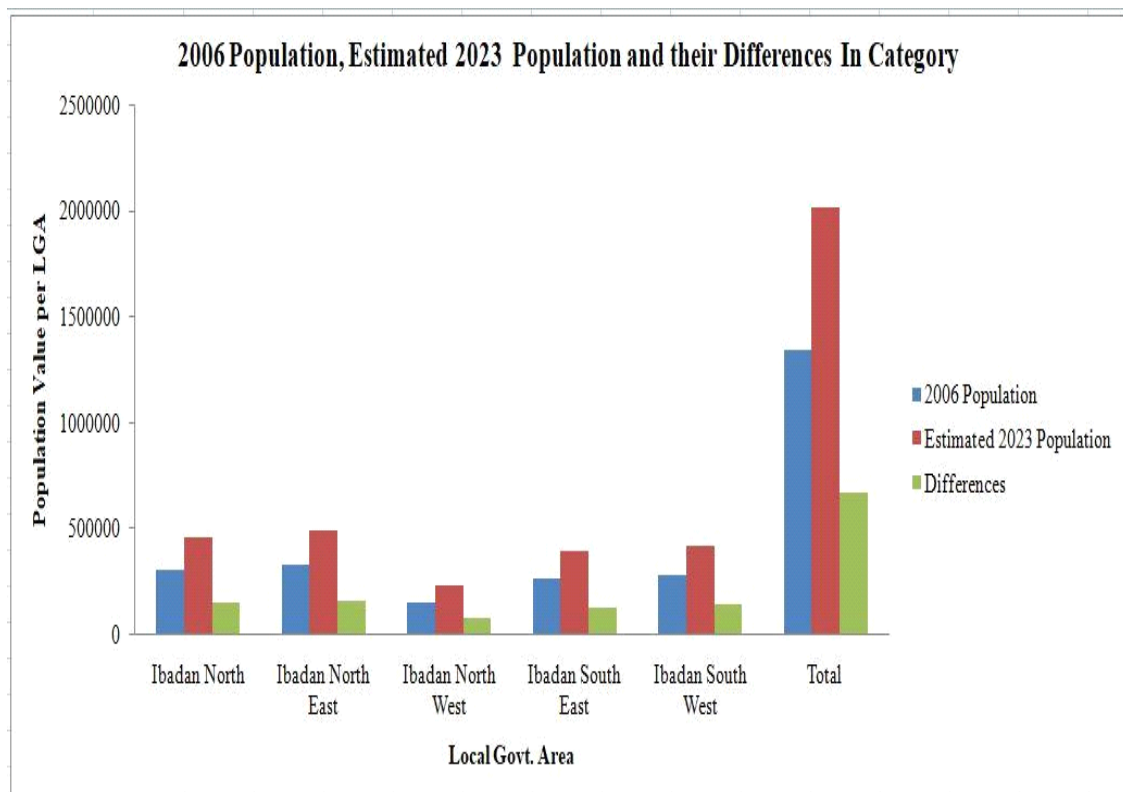
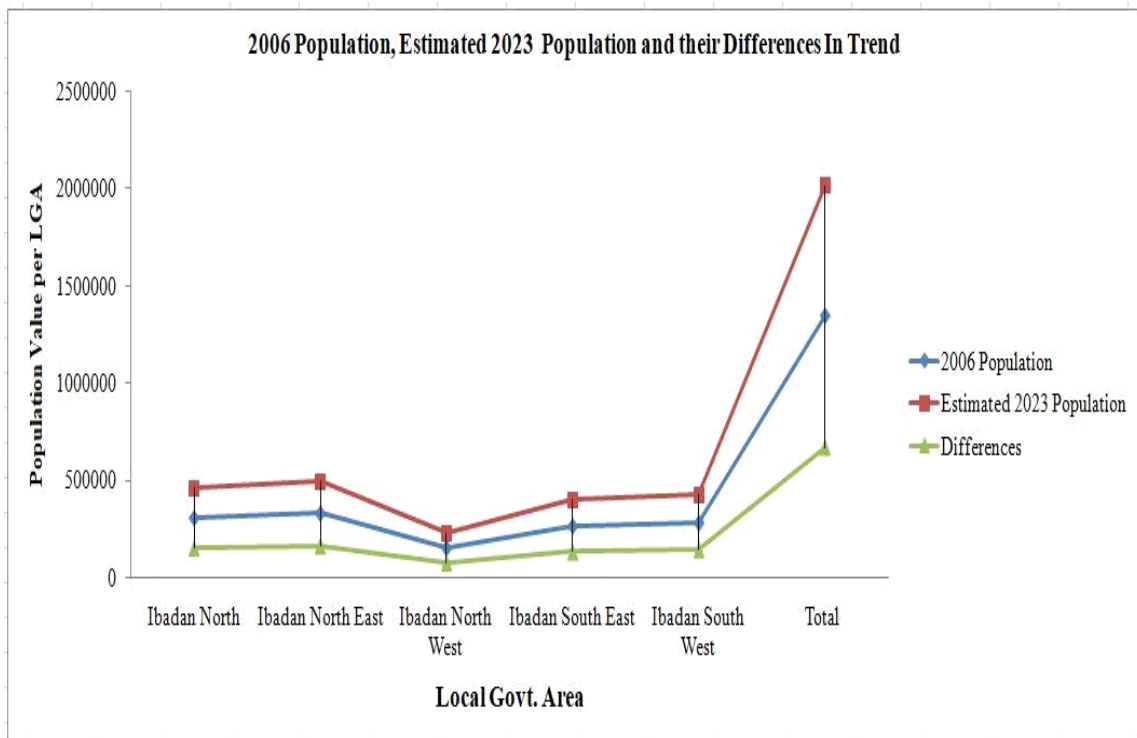


Figure 4: Showing Comparison of Population of Persons in 2006, 2023 and Their Increase in Trend and across Category

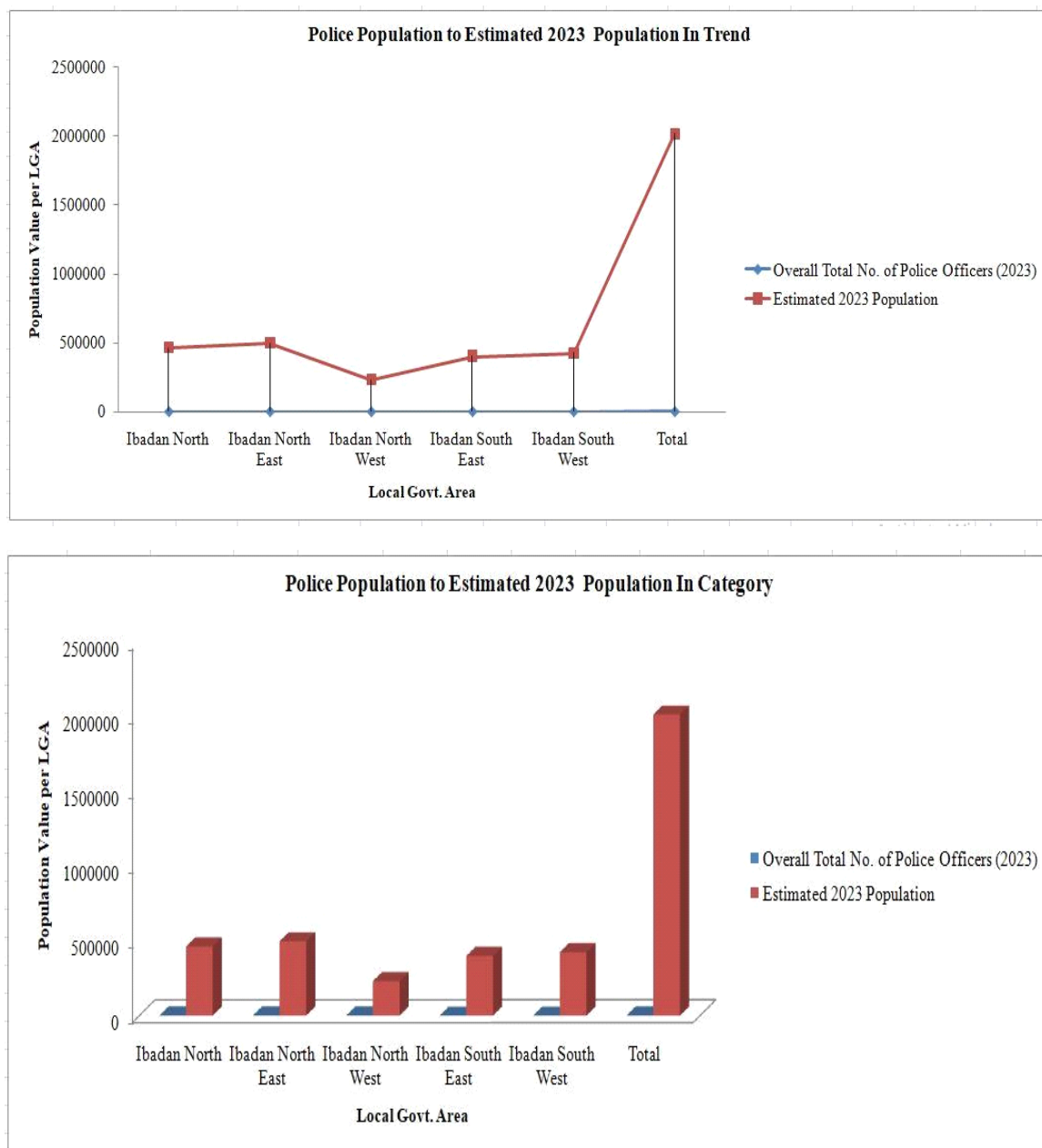


Figure 5: Showing Police Personnel Estimated Population in 2023 in Trend and across Category

Table 4 and Figures 2-5 above showed that the population of persons in Ibadan North LGA in 2006 with (308,119) increased as at the first quarter of the year 2023 by 49.967% to 462,077 persons; Ibadan North East with (331,444) increased by 49.967% to 497,057 persons in 2023; Ibadan North West with (154,029) increased by 49.967% to 230,993 persons in 2023; Ibadan South East with (266,457) increased by 49.967% to 399,598 persons in 2023; and Ibadan South West with (280,098) increased by 51.573% to 424,554 persons in 2023. The results showed that Ibadan North and Ibadan North East, Ibadan North West and Ibadan South East move at the same percentage growth rate.



Ratio of police to population as at 2023 was as calculated as below:

Ratio of Police Personnel to Population of Persons = 1: 2023 Estimated Population Growth per LGAs / 2023 Population of Police Personnel per LGAs.

Table 5: Description of Result of Ratio of Police personnel to Population of Persons in the Study Areas

S/No.	L.G.A	No. of Police Officers/Personnel 2023	Estimated Population 2023	Ratio of Police to Estimated Population
1	Ibadan North	219	462,077	1:2,110
2	Ibadan/N E	234	497,057	1:2,124
3	Ibadan/NW	242	230,993	1:955
4	Ibadan S/E	206	399,598	1:1,940
5	Ibadan SW	213	424,554	1:1,993
Grand Total		1,114	2,014,279	•

However, Table 5 shows that police personnel to the population of persons in Ibadan North is in ratio 1:2,110, Ibadan North East in ratio 1:2,124, Ibadan North West in ratio 1:955, Ibadan South East in ratio 1:1,940 and Ibadan South West in ratio 1:1,993. The United Nations recommended one (1) police officer to four hundred (450) persons (<https://guardian.ng/opinion/the-necessity-of-state-police/>), according to Bright Okata (2022). The ratio of police personnel to population of persons in this study was compared with the United Nations' recommended ratio and it showed that one police personnel in Ibadan North and Ibadan North East is serving almost five times that of the United Nations' recommendation with their ratio difference 1: 4.68 and 1: 4.72 respectively.

However, in Ibadan North West, one police officer is serving two times of United Nations' recommended value with ratio difference 1: 2.12 and in Ibadan South East and Ibadan South West; one police officer is serving four times the United Nation recommended value with ratio difference 1: 4.31 and 1: 4.43 respectively.

Table 6: Description of Ratio of Police Personnel to Police Station in the Study Areas

S/No	L.G.A	No. of Police Officers/Personnel's 2023	Number of Police Station per LGA 2023	Ratio of Police Personnel to Police Station
1	Ibadan North	219	12	18.25:1
2	Ibadan/N E	234	1	234:1
3	Ibadan/NW	242	1	242:1
4	Ibadan S/E	206	3	68.6:1
5	Ibadan SW	213	5	42.6:1
Grand Total		1,114	22	50.64:1



Table 6 reveals the ratio of police personnel to police stations in the study area. The analysis showed that in Ibadan North, the number police officers is fair in light of the number of police stations (approximately 18 police personnel to 1 police station), while in the remaining local government areas, the number of police officers is not fair to the police stations as all showed a high number of personnel. However, some of these police stations are not big enough to contain a larger number of officers except those in the headquarters.

Table 7: Description of Ratio of Police Personnel to Police Station in the Study Areas

S/No.	L.G.A	No. of Police Officers/Personnel 2023	Estimated Police Personnel's 2023 based on United Nation Recommendation	Estimated Population 2023
1	Ibadan North	219	1027	462,077
2	Ibadan/N E	234	1104	497,057
3	Ibadan/NW	242	513	230,993
4	Ibadan S/E	206	888	399,598
5	Ibadan SW	213	944	424,554
Grand Total		1,114	4476	2,014,279

From Table 7 above, estimated police personnel as at the first quarter of the year 2023 was done using the ratio of the police to population as at the first quarter of the year 2023 for each LGAs (Table 4) per the United Nations' recommended value of 450. Then, the values obtained were used with the 2023 police personnel data obtained from the police headquarters to obtain the required number of personnel to meet up with the estimated population of persons as at the first quarter of the year 2023. For an effective policing and to be in line with the United Nations' recommendation, as seen in Table 6, the study areas need about 4,476 police personnel to meet up with the estimated population of 2,014,279 as at the first quarter of the year 2023 in order to be able to tackle any insecurity issues and may later increased throughout the rest of the year as population of persons increased.

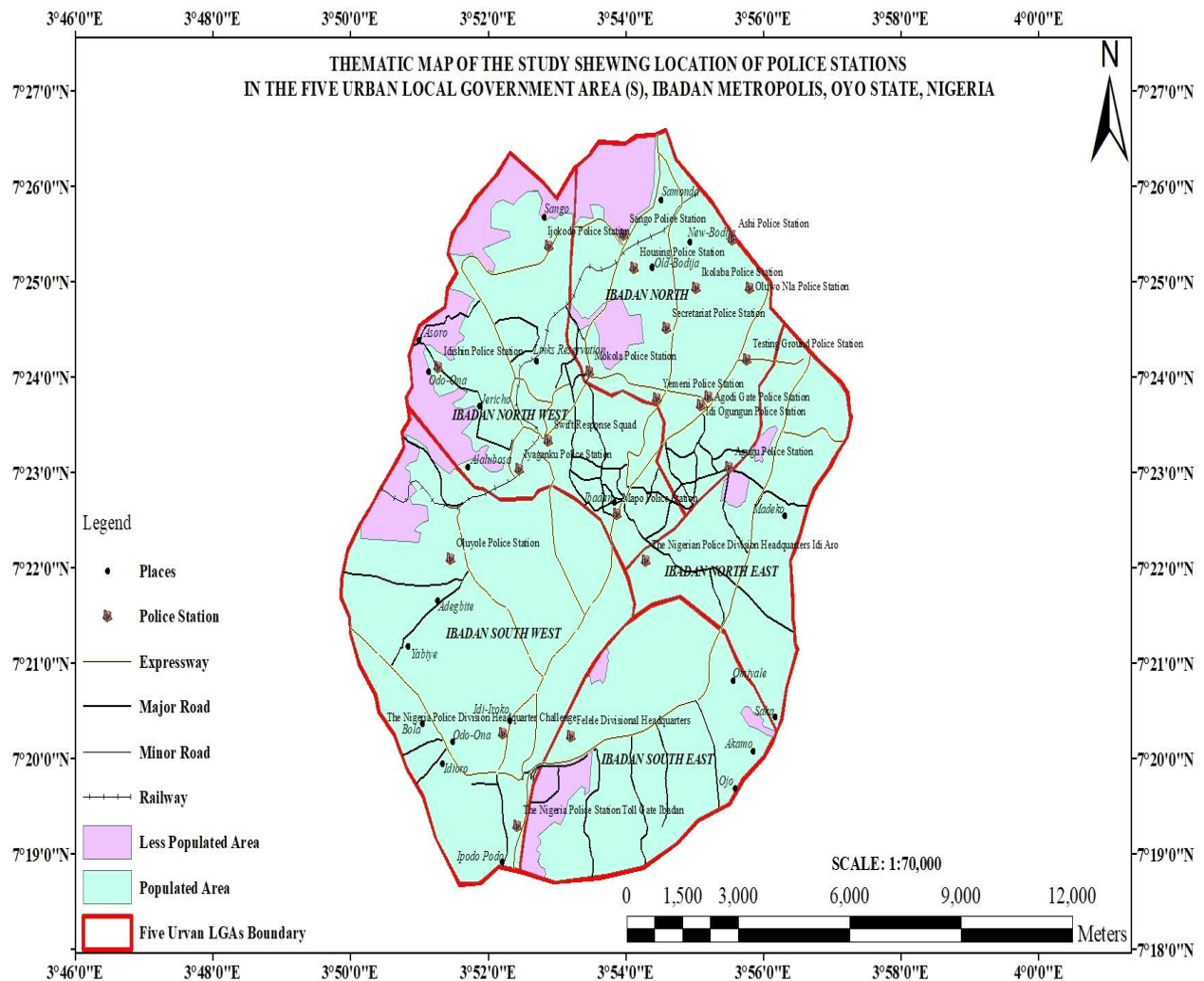
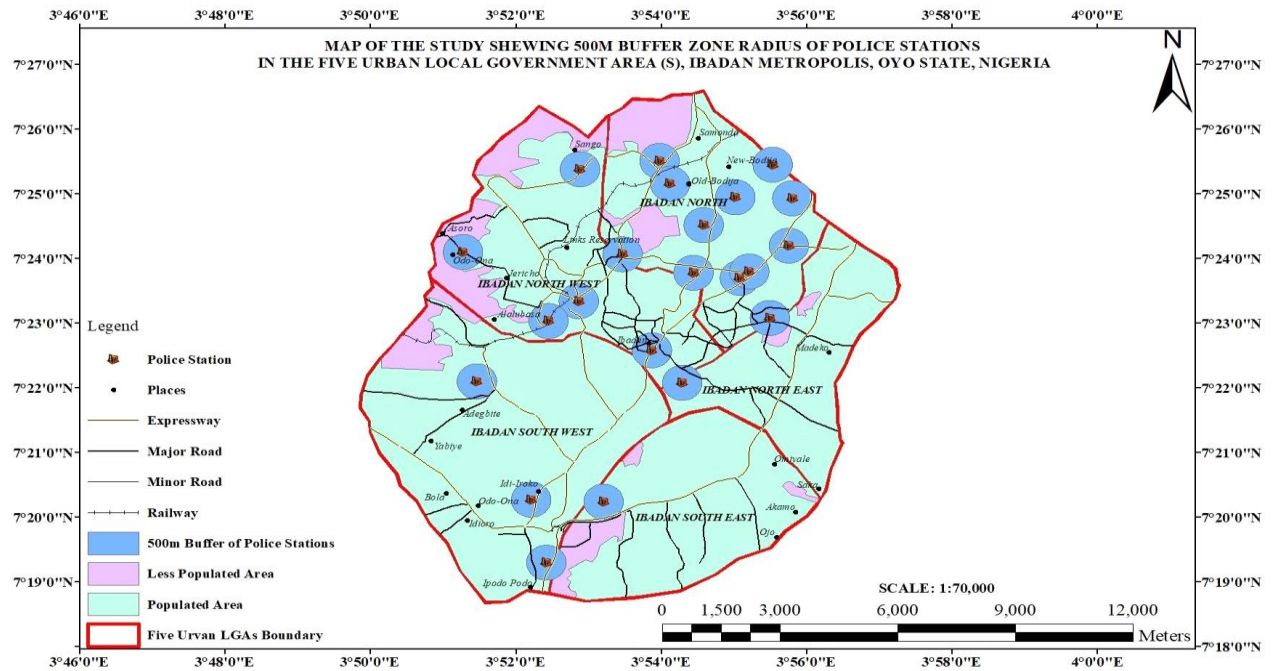
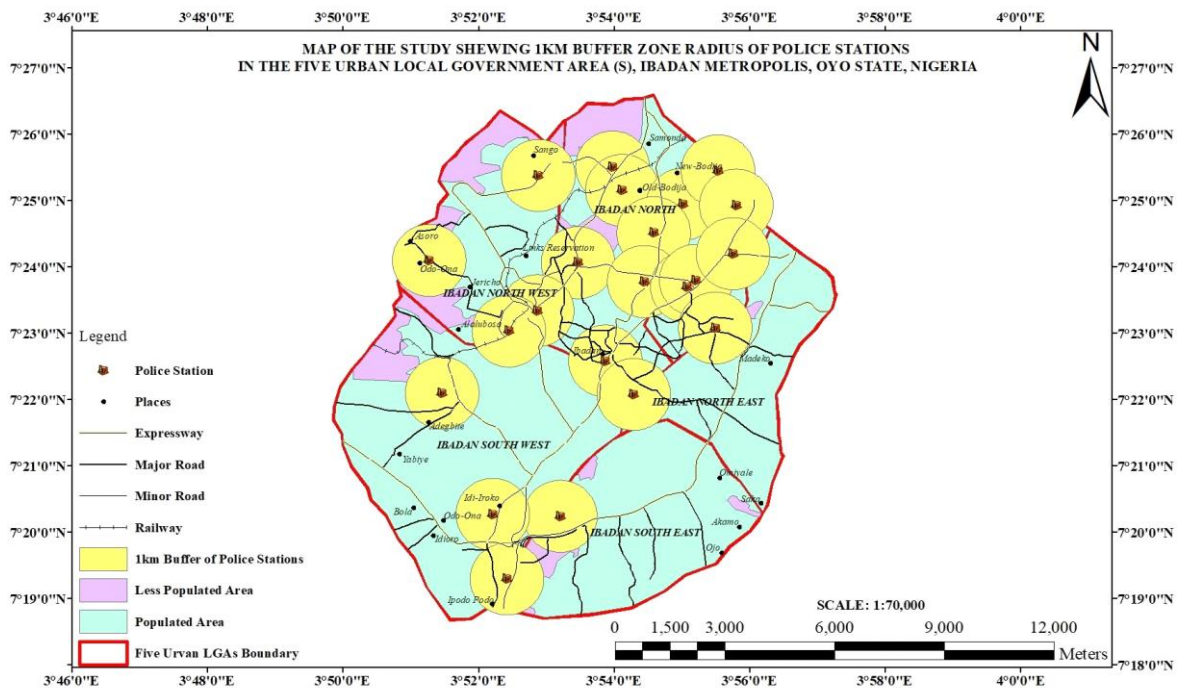


Figure 6: Map of the Study Showing the Location of Police Stations

Figure 6 above shows twelve (12) police stations in Ibadan North, one (1) in Ibadan North East and South East, three (3) in Ibadan South West and five (5) in Ibadan North West. Police stations were evenly distributed in Ibadan North, scattered in Ibadan North West and Ibadan South West.



(a)



(b)

Figure 7 (a & b): Buffer Zone Radius of 500m and 1km of Police Station

Spatial Search

The spatial search was done using the selection by location from the selection menu in ArcGIS 10.4 to show a query on proximity of one feature to another at a particular radius distance, and this was done in this study to show the closeness of police stations to the environment (less populated and populated areas).

Query 1: Select location = 500m and 1km of police station to the less populated area.

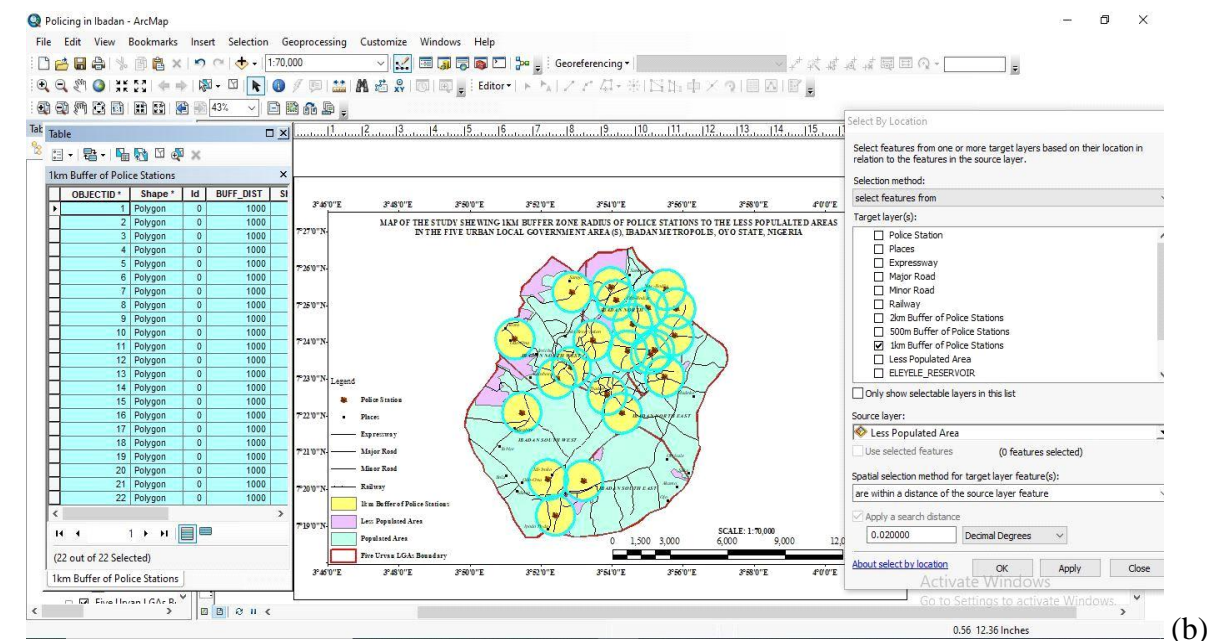
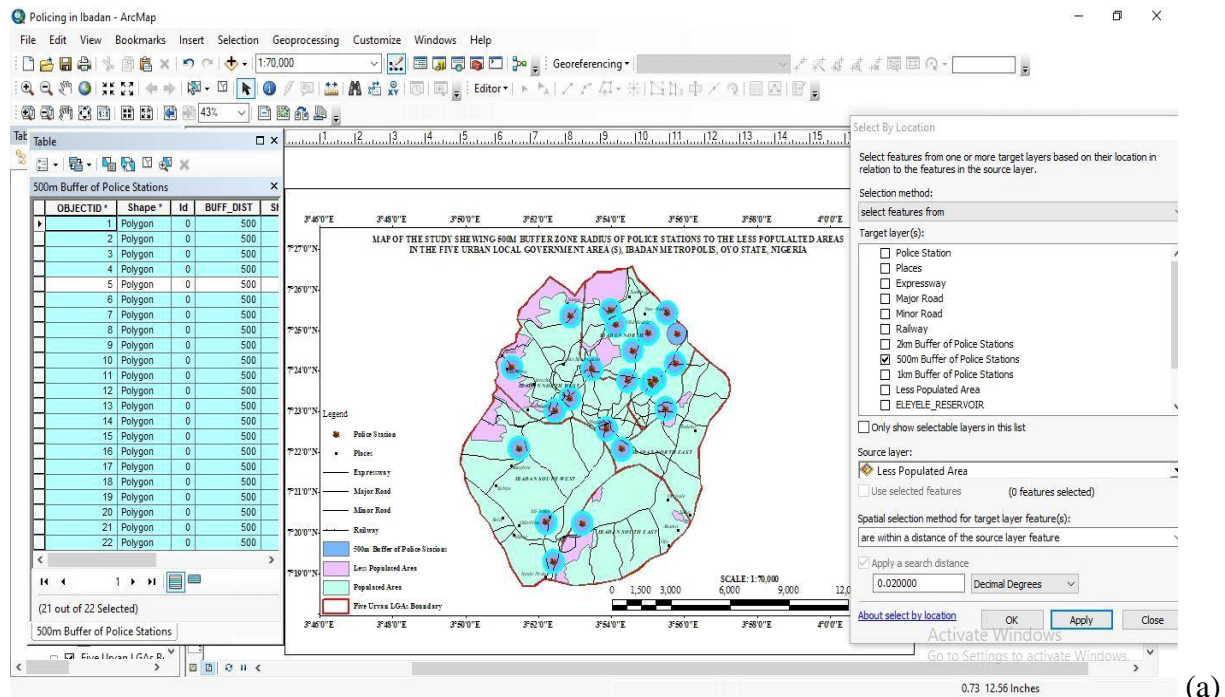
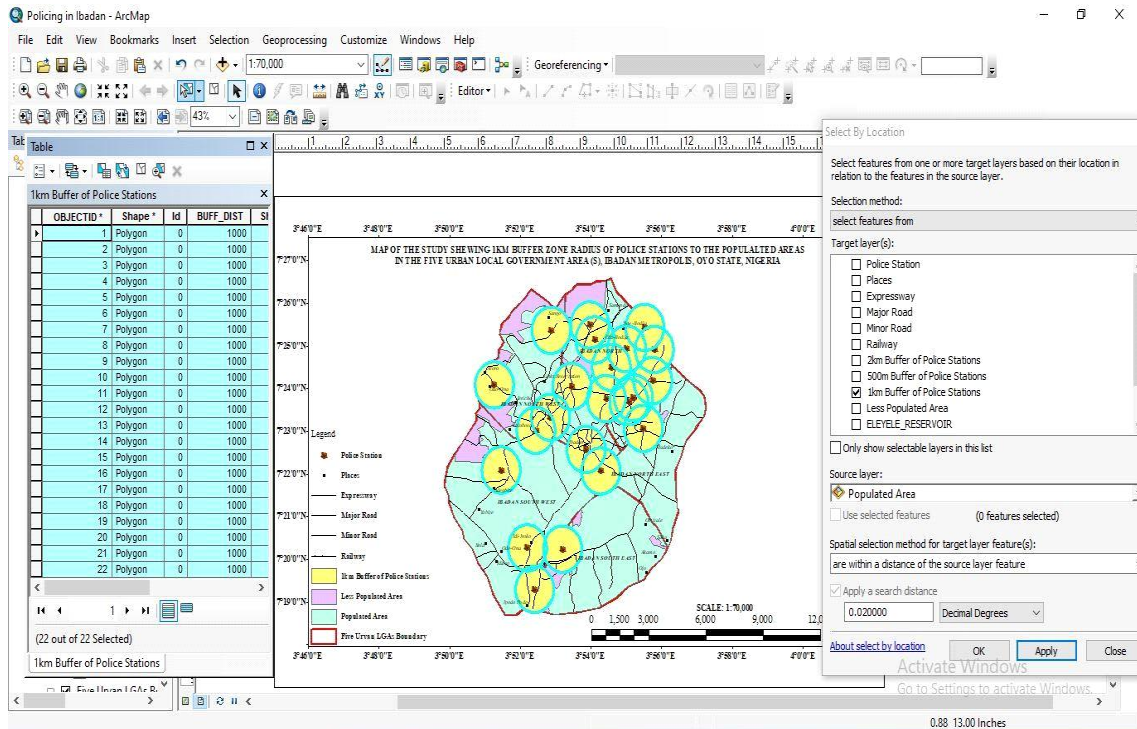
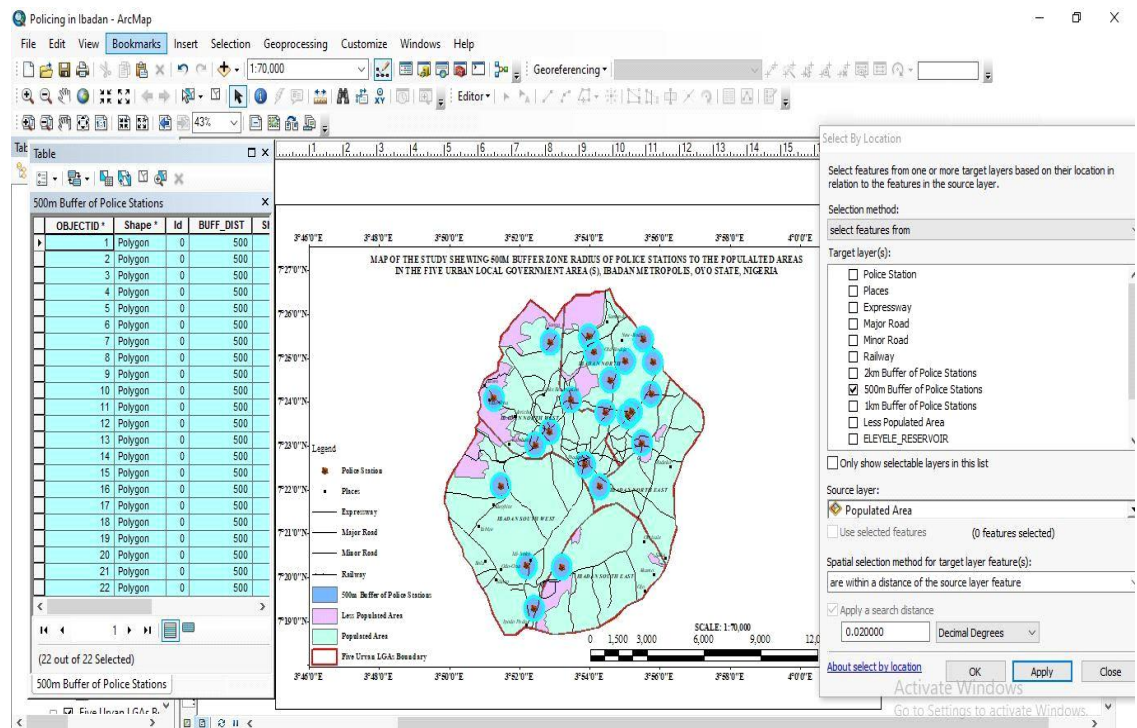


Figure 8 (a & b): Selection by Location of 500m and 1km Buffer Zone Radius of Police Station to the Less Populated Areas

Query 2: Select location = 500m and 1km of police station to the populated areas.



(a)



(b)

Figure 9 (a & b): Selection by Location of 500m and 1km Buffer Zone Radius of Police Station to the Populated Areas



From Query 1 (Figure 8(a & b)), it shows that twenty-one (21) out of twenty-two (22) police stations are within 500m radius and twenty-two (22) are within 1km to the less populated areas. Query 2 (Figure 9 (a & b)) shows that all the police stations are within 500m and 1km buffer radius to the populated areas, and this means that at 500m and 1km radius distance, the police stations are well positioned (Figure 7a & b).

CONCLUSION

This study has analyzed the police personnel ratio to population growth in five urban local government areas in Ibadan metropolis. The findings of the study showed that the ratio of police personnel to population of persons in the study areas do not conform to the United Nations' of 1:450. It can be concluded from the analysis of the ratio of police personnel to population of persons and the ratio of police personnel to police stations in the study areas that the study areas are not completely safe from crime related activities. By comparing the estimated population with the number of actual police personnel required in relation to the United Nations' recommendation, as well as the number of police stations, the findings call for urgent actions to be taken by the concerned authorities. It is then recommended that the Federal Government of Nigeria should employ young Nigerians who are ready to join and be enlisted as part of the Nigerian Police Force to tackle the security situation in the nation, and as well establish more police stations in case of any insurgency in the study areas. Finally, the legislative arm of government should pass the bill to establish both the state and community police to ease the federal government's efforts so that Nigerians can be assured of peace despite the huge population.

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