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# Human Population Growth and the Socioeconomic Effects in Warri Metropolitan City Delta State Nigeria

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> **Abstract**---The observable impact of population growth on socioeconomic life has become a major policy issue, especially in developing countries. This article examines the growth in human population and the socio-economic effects in Warri metropolis, Nigeria, with the specific objectives of establishing the trend in population growth from 1960-2020 using secondary data, highlighting the effects that population growth has on education, employment, and income levels, examining the effects of population growth on the socioeconomic life of the inhabitants of Warri metropolis, and to make recommendations. Deriving from percentage investigation of responses, the study found that population growth exerts a considerable impact on education, employment, and income levels in the Warri metropolis. The ANOVA test outcome with p < 0.05 (0.000), led to the rejection of the first null hypothesis and the alternative hypothesis accepted, therefore there is a significant change in population across the period. The post hoc test reveals that the variations however emanated from the period between 1980 -2020. Another finding portrays that, with an R-square value of .639, that population growth expresses about 64% effect on socioeconomic life in Warri metropolis. The study made policy-relevant the recommendations that stem from the findings.

*Keywords*---effects, growth, human population, Nigeria, socioeconomic life, warri metropolis.

## Introduction

The socioeconomic components of a people's life are usually measured in terms of a combination of variables like education and employment in addition to income. The increase in a given population as observed over a given period and space

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usually result in some degrees of inequities in access to resources, and other issues relating to opportunities and power. The effect of population growth as it relates to economic development has been a topic of significant investigation and debate over the past few decades. During the mid-twentieth century, population growth became a worldwide public policy concern as mortality decreases in many developing countries were not correlated with fertility reductions, resulting in unprecedented growth rates (Greene & Merrick, 2005). To make obvious that dynamic population growth increases economic growth, some writers provide theoretical opinion and empirical evidence, while others uncover evidence to sustain the alternate conclusion. For instance, Peterson et al. (2017), posited that declining population growth, as observed in high-income countries will aptly create socioeconomic problems, whereas high growth rates in low-income nations will constitute a considerable drag on their socio-economic development. However, he is of the view that authorized international migration could regulate the imbalance, but some developed nations' foreign policies do not favour such. Also, the work of an expert committee, the 1986 National Research Council report, concluded that rapid population upsurge can slow development, but only under precise conditions and generally with limited or weak effects (Birdsall & Griffin, 1988). Furthermore, Birdsall et al. (2001), in their exploration of the perceptible impact of demography on economic growth reinforces the verity that rapid population growth had a quantitative negative impact on the tempo of summative economic growth as it is in the developing countries of the world (Daly, 1986; Kelley, 1986).

There is, therefore, no acceptable generalization because countries vary widely in rates of growth, level of development, population density, source or existence of growth in population and level of income, and other allied factors that could lead to uniform impacts (Bloom & Canning, 2006). As noted by Enke (1970), population dimension and per capita income does not grow at equal rapidity as per capita income grows less rapidly, thus, maximizing future per capita income will require a completed smaller family size. Replacement fertility of about two children per couple will encourage investment in the well-being and education of the children and youths, and the performance of workers by both governments and families. To this end, Developing countries' economic development will likely be enhanced if their population grows less rapidly. Although a hand full of studies have investigated the effect of an increase in human population on the socioeconomic activities and life of people across space and over time, few have given attention to such dimension of growth over time in Nigeria's Niger Delta Communities, hence, this research article, therefore, examines the socioeconomic effects of human population growth with particular focus on Warri Metropolis, Delta State, Nigeria (National Research Council, 1986; Odemerho & Ejemeyovwi, 2008).

Warri metropolis is situated in Nigeria's Niger Delta region with an absolute location address that lies between Latitudes 5o30'0" and 5o35'0" North and Longitudes 5o40'30" to 5o51'0" East. Originating from a petite riverine settlement, Warri has expanded to cover the surrounding towns of Effurun, Ekpan, Enerhen, Edjeba, Ogunu, Jakpa, Ovwian-Aladja, Udu Road, etc. resulting in an eventual landmass of over 499 km2. The predominant ethnic groups are the Urhobo, Ijaw, and Itsekiri. However, due to its urban status, there is a sizeable in-migration of people from around the world into Warri which includes expatriates, and people from other Nigerian tribes (Caputo et al., 2005; Goldstein & Khan, 1985). The prime religion is Christianity in this area of consideration. Besides been an administrative hub, a commercial center, and an educational center, all categories of economic activities ranging from; primary, secondary, tertiary, quaternary, and winery economic activities are visible in Warri. Figure 1 below is the map of the Warri metropolis.



The problem stems from unchecked population growth which has occurred in several regions across the globe in recent times. Nigeria is one of the developing nations that since its independence from the British colonial rule in the year 1960 has undergone population escalation. Although t growth rate declined from 3.3 percent in the 1980s to around 2.8 percent in 1991 and increased marginally to 3.18 percent in 2006, the soaring growth rate has been sustained over the years (National Population Commission, 2009). According to the national population census estimates for 2006, the Warri metropolis had a total of 311,970 inhabitants and has since undergone substantial population growth over the years, with a current population figure of about 418000 residents spatially distributed across four local government areas such as Uvwie, Udu, and Okpe and Warri South (Van den Berg et al., 1982; Hillert, 1965).

Warri is invariably one of Nigeria's major cities that due to population growth, has undergone tremendous changes in its socioeconomic climate and physical landscape. Rapid population growth as it is in Warri stemmed from her status as Warri South LGA's headquarters and the zonal headquarters of federal and parastate companies and that of the Oil and Gas industry such as Nigeria National Petroleum Company (NNPC), Shell Petroleum Development Company (SPDC), many shipping and allied companies that are employers of both skilled and unskillful labor, the establishment of the Warri Refinery and Petrochemical Company, the Aladja Steel Complex and its related companies have undeniably led to the rapid growth of the population via urbanization (Ambrose, 1998; Edwards et al., 1992).

Furthermore, the establishment of the Petroleum Training Institute (PTI), the Federal University of Petroleum Resources (FUPRE) at Effurun, the Delta State Nursing School, the Nigerian Maritime University sited in Okerenkoko and other academic institutions have all contributed to population upsurge in Warri. The multiplicity in elementary and secondary schools, the presence of Osubi airport and Warri Stadium, rising number of financial institutions and multiple tourist centers such as Warri Township Stadium, Delta Shopping Mall (Shoprite), etc contributed immensely to the increasing population of Warri as they operate as pull factors attracting migrants into the city. Principally, the incursion of migrants usually have profound and multiple effects on the population of the receiving region (De Jager & Musuva, 2016).

The rapid increase in population in Warri, as in other cities implies feeding more mouths, expanding infrastructures, increasing provision of facilities and such as hospitals, educational facilities, water, amenities electricity. telecommunications, among others. The pressure resulting from the growth of population, alongside urbanization and industrialization, appears to be mainly reflected in the level of education, employment/occupation, and income among others, hence the need to examine its plausible effect on some of these socioeconomic variables. This research article aims at identifying the effects of population growth on socioeconomic life in Warri Metropolis, Delta State Nigeria. The specific objectives are to: establish the trend in population growth from 1960-2020 using secondary data; highlight the effects of population growth in Warri on education, employment, and income levels; examine the effects of population growth on the socio-economic life of the inhabitants in Warri metropolis; and also to make recommendations. The following null hypotheses were formulated and tested:

- There is no significant change in the population of Warri over the years (1960-2020)
- Population growth has no significant effect on the socio-economic life of the people in Warri

## Theoretical framework

This research article anchors on the Revisionist theory II of population growth which emanated from the second International Population Conference held in Mexico in 1984. Kelley & Schmidt (1996), considered it a revisionist document, as it portends a break from the traditional opinion that formerly controlled the population debate. The main view of the theory is that vigorous population growth was pertinent to poverty and wobbly economic development, particularly in developing countries (UN, 2015). The theory supported the perception that fast population growth could have unconstructive economic outcomes. Tapering population increase, it declared, would likely assuage rates of degradation of some renewable natural resources and also lessen economic burdens. This article anchors on this theory because the expected outcome is to see how population growth in Warri metropolitan area can be regulated to improve residents' wellbeing and make the Government's developmental efforts relating to Warri a worthwhile and fruitful venture (Poulton et al., 2002; Corna, 2013).

#### **Materials and Methods**

Primary data were used together with secondary data in this research. The researcher derived primary data via the use of structured questionnaires designed to elicit information from respondents, to ascertain the impact population growth has on the socio-economic life of the people. While the Secondary data include archived internet data consisting of population data for the lengthy period of 1950 till 2035. Population statistics for the specified period of 1960-2020 were subsequently extracted from the aforementioned, for the study. The area was stratified into three sectors; Sector A, Sector B, and Sector C. Equal number of copies of the designed questionnaires were circumspectly administered in each sector of the city. The purpose of this is to achieve adequate representation of the entire Warri metropolitan space (Mahmud et al., 2016; Enuneku et al., 2020).

The population data obtained were plotted on a chart to show the trend analysis of the population over the last six decades and the associated growth rate trend. A Time series graph was used to illustrate the increase in the population per unit time. This information provides an outline of the level and pace of population growth as it obtains in the city of Warri on an annual basis. The data generated from the questionnaire survey were precisely analyzed and subsequently displayed in the form of charts and graphs. ANOVA and Regression analysis were adopted for testing the first and second hypotheses respectively at the 0.05 significance level (Ibegbulem, 2021; Igben & Ilaya, 2021).

## **Discussion of Results**

The study's first specific objective is to identify the effects of human population growth on some socioeconomic variables to include education, employment, and also the income level in Warri. To achieve this, a question was posed to appraise the effect on education in Warri. An item in the questionnaire borders on whether population growth in Warri has negatively affected education. Out of the entire respondents, 63% (21% and 42%) both agreed and strongly agreed respectively that increase in Population in Warri has negatively affected education, while 33% of them (23% and 10%) both disagreed and strongly disagreed that growth of population has negatively impacted education in the area studied. These findings agree with that of Simon & Pilarski (1979), who, in their study of how Population growth impacts the number of education children received, discovered that one negative effect on education is that it attenuates the amount of education that children obtain. Birdsall and Griffin (1988) also lend weight to the above when they posited that high fertility which is a causal factor of population rise strains funds for indigent families by limiting the resources available for feeding, education, and health care for the children.

To appraise how population growth has affected employment in Warri, a question was posed on the likelihood of Population growth decreasing the chances of getting a job in Warri. In responding to this, about 74% of the entire respondents both strongly agreed and agreed (46% and 28%) respectively, that population growth negatively affects the chances of finding a job in Warri,17% strongly disagreed while 9% disagreed. From this result, it is obvious that increased population increases the scramble for available jobs thus reducing the chances of getting paid employment in Warri. This conforms with Linden (2017), research outcome where he revealed that population growth has consistently been problematic as more people invariably use more of earth's limited resources, so reducing long-term all-inclusive prospective growth. Heady & Hodge (2009), also noted that economic growth, of which appreciable employment rate is a determinant, is important for raising living standards in any part of the globe and the position of population growth in the enhancement of living standards is a foremost policy concern.

Furthermore, in assessing the effect of population increase on income level in Warri, 62% strongly agreed that income level is negatively affected by population growth, 22% agreed, 10% strongly disagreed while 6% disagreed. From the above percentage analysis, as it relates to responses, it could be deduced that, although population increase implies an increase in manpower who are ready to work which can invariably increase income per capita, it can lead to workers being hired at a lower cost thus leading to reduced income per capita as well

## **Hypotheses Testing**

Hypothesis one: There has been no significant change in the population of Warri from 1960-2020. The table below provided the data for testing hypothesis one

DATE	POPULATION	ANNUAL CHANGE
12/31/1960	33000	6.45
12/31/1961	36000	9.09
12/31/1962	39000	8.33
12/31/1963	42000	7.69
12/31/1964	45000	7.14
12/31/1965	48000	6.67
12/31/1966	52000	8.33
12/31/1967	56000	7.69
12/31/1968	60000	7.14
12/31/1969	64000	6.67
12/31/1970	69000	7.81
12/31/1971	72000	4.35
12/31/1972	76000	5.56
12/31/1973	80000	5.26
12/31/1974	84000	5.00
12/31/1975	88000	4.76
12/31/1976	93000	5.68

Table 1 Nigeria metro area population (1960-2020)

12/31/1977	97000	4.30
12/31/1978	102000	5.15
12/31/1979	108000	5.88
12/31/1980	113000	4.63
12/31/1981	119000	5.31
12/31/1982	125000	5.04
12/31/1983	131000	4 80
12/31/1984	137000	4 58
12/31/1985	144000	5 1 1
12/31/1905	151000	4.86
12/31/1980	150000	5.30
12/31/1907	167000	5.50
12/31/1900	107000	5.05
12/31/1989	175000	4.79
12/31/1990	184000	5.14
12/31/1991	194000	5.43
12/31/1992	204000	5.15
12/31/1993	215000	5.39
12/31/1994	226000	5.12
12/31/1995	238000	5.31
12/31/1996	250000	5.04
12/31/1997	263000	5.20
12/31/1998	277000	5.32
12/31/1999	292000	5.42
12/31/2000	307000	5.14
12/31/2001	323000	5.21
12/31/2002	340000	5.26
12/31/2003	358000	5.29
12/31/2004	377000	5.31
12/31/2005	397000	5.31
12/31/2006	418000	5.29
12/31/2007	440000	5.26
12/31/2008	463000	5.23
12/31/2009	487000	5.18
12/31/2010	513000	5.34
12/31/2011	540000	5.26
12/31/2012	569000	5.37
12/31/2013	598000	5.10
12/31/2014	630000	5.35
12/31/2015	663000	5.24
12/31/2016	698000	5.28
12/31/2010	735000	5 30
12/31/2017	774000	5 31
12/31/2010	814000	5.17
12/31/2019	856000	5.16
12/31/2020 Totol	16409000	0.10 2/1 00
Total	1040000	341.20 5 504754
wean	200903.0	5.594754

Source: Modified after the United Nations world population prospects 2020 www.macrotrend.org Table 1 shows the annual population of Warri from 1960 -2020 as modified after the United Nations-World Population Prospect and it depicts that the population figure of Warri increases with each successive year. From a small figure of 33,000 in 1960, it grew to 856,000 persons in 2020. Also, deriving from Table 1, the annual growth rate of the Warri population from 1960 to 2020 shows a sharp and sustained increase of above 5%, aside from the slight drop in 1971(4.35), 1975(4.76), 1977(4.3), 1980(4.63%), 1983(4.83) 1984(4.58),1986 (4.86), and 1989 (4.79). These growth rates have apparent implications for continued provisions of socioeconomic needs. Figure 2 below presents a bar graph showing the steady increase in the population of the study area.



Figure 2. Bar graph showing the population in Warri

Fig 2 shows the population figures of Warri Metropolitan City from 1960-2020. From the graph above, it could be deduced that a significant change occurred from 1960 (33,000) to 2000 (307,000) with a sharp rise in 2010 (513,000) and 2020 (856,000) indicating an absolute increase of 823,000 from 1960-2020. This implies that the population of the Warri metropolis increased tremendously over the years. A Time series graph was also used to validate the fact there is an increase in the growth rate over the years as shown in Figure 3 below:



Figure 3. Time Series graph showing population changes in Warri

Figure 3 shows the annual changes in the population growth rate of Warri Metropolitan City from 1960-2020. The statistical data on Table1 was also subjected to ANOVA Test as presented in Table 2 below:

Table 2Summary of ANOVA results of the difference in population in the study area<br/>through the period of 1960-2020

Population	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2950957656333.830	5	590191531266.766	204.083	.000
Within Groups	159055327272.727	55	2891915041.322		
Total	3110012983606.557	60			

The ANOVA test was used to test the significance of the difference between the populations of the different decades beginning from 1960 till 2020. The table above shows the summary of the outcome of the ANOVA test. With p< 0.05 (0.000), the null hypothesis is rejected and the alternative hypothesis accepted. This implies that there is a significant change in population across the period. The post hoc test reveals that the variations however emanated from the period between 1980 -2020.

Hypothesis two: Population growth has no significant effect on socio-economic activities in the Warri metropolis. Data obtained via a structured questionnaire were coded and analyzed to ascertain how population growth has affected the socio-economic life of the inhabitants of the Warri metropolis. The outcome is presented in Table 3 below:

		Regies	sion analysis	
Model	R	R Square	Adjusted R	Std. The error of
			Square	the Estimate
1	.983ª	.639	.211	106.80743
Source: SPSS Output, 2020				

Table 3		
Regression	analysis	

Table 3 shows that the model R (.983) is significant at a 0.05 level of confidence. therefore, the null hypothesis which states that population growth has no significant effect on socio-economic activities in the area is rejected while the alternative hypothesis is accepted. In addition, the R Square value of (.639) gives a clear indication that population growth has about 64% effect on socio-economic activities in the area. It could therefore be deduced that growth in the human population has a significant effect on socio-economic activities in the area.

## Conclusion

This article examined the growth in the human population and its socioeconomic effects. Both primary and secondary data were generated to test the stated hypotheses. From percentage analysis about responses, the study found that population growth exerts considerable impact on education, employment, and income levels in Warri. The study established a significant change in the population size of the Warri metropolis as well as the growth rate over the period studied using the Time Series graph and ANOVA Test. Besides, the study found via regression analysis that, with an R-square value of .639, that population growth has about 64% effect socioeconomic life of Warri dwellers. These findings align with that of Birdsall et al. (2001), who posited that the continued astronomical growth in the human population has copious physical, social, economic, political, and environmental consequences. Having established steady upward growth in human population in the Warri Metropolitan City of Nigeria, with the attendant adverse effect on socioeconomic variables like education, income, and employment and the wide-ranging socio-economic activities existing in the study area, it becomes safe to conclude that government needs to intervene in the aspects of population growth control and management. This will help to enhance economic development in the study area.

#### Recommendation

It is thus recommended, that Governments at national and sub-national levels should enact or strengthen the policies that will check the fast-growing population and uncontrolled migration. Birth control procedures and family planning methods should be adopted by large households to control high fertility rates while Rural developmental schemes are also suggested to curtail ruralurban migration. Also, the apt implementation of pertinent policies that will improve the available jobs, educational facilities, and other income-generating ventures for the inhabitants of Warri metropolitan city is highly recommended.

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