



POPULATION GROWTH AND SOCIO-ECONOMIC DEVELOPMENT OF CROSS RIVER STATE, NIGERIA

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Abstract:

The thesis of this study was to examine the relationship between population growth and socio-economic development of Cross River State, Nigeria. Specifically, the study investigated the effect of population growth on education and healthcare services in Cross River State. Related literatures were thematically reviewed. The study was anchored on Malthusian population theory and Boserupian hypothesis. Survey research design was adopted, while, stratified random sampling technique was used to select four hundred (400) respondents from the three senatorial districts of Cross River State. Elicited data were analyzed using Pearson Product Moment Correlation Coefficient (PPMC). The results revealed that the effect of population growth on education and health services are significantly positive in Cross River State, Nigeria. The study concluded that since population growth affect socio-economic development in Cross River State; appropriate measures should be taken to check rapid population growth because of its negative consequences on education and healthcare services in the State. The study recommended that more facilities and manpower should be provided to help improve the quality of education and healthcare services in Cross River State. In addition, rural areas should be made attractive in terms of provision of basic infrastructures and facilities, as well as, proper sensitization that would clear doubts on the obstacles to effective population control such as religion, lack of population education, culture and normative system in favour of high fertility.

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1. Introduction

The global community, according to Bongaarts (2009), is experiencing unprecedentedly rapid demographic change. The most obvious example of this change is the huge expansion of the human population. Between 1990-2000, Max (2015), noted that the human population increased from 1.5 to 6.1 billion. The results of the 2015 Revision by the Department of Economic and Social Affairs of the United Nations, showed that the world's population reached 7.3 billion as of mid-2015, implying that the world has added approximately one billion people in the span of the last twelve years. Sixty percent of the global population live in Asia (4.4 billion), 16 percent in Africa (1.2 billion), 10 percent in Europe (738 million), 9 percent in Latin America and the Caribbean (634 million), and the remaining 5 percent in Northern America (358 million) and Oceania (39 million). China (1.4 billion) and India (1.3 billion) remain the two largest and most populated countries of the world, both with more than 1 billion people each, representing 19 and 18 percent of the world's population, respectively (United Nations [U.N.], 2015).

According to the United States Census Bureau (USCB) and the United Nations (UN), currently, the world's population continues to grow, though more slowly than in the recent past. Ten years ago, the world's population was growing by 1.24 percent per year. Today, it is growing by 1.18 percent per year, or approximately an additional 83 million people annually. The world's population is projected to increase by more than one billion people within the next 15 years, reaching 8.5 billion in 2030, and to increase further to 9.7 billion in 2050 and 11.2 billion by 2100 (UN, 2015, USCB, 2013). This recent development in population growth has triggered concern throughout the world, and has posed serious challenge to individual country's socio-economic development. However, the problem of population, according to United Nations Population Information Network (POPIN), is not simply a problem of numbers; it is a problem of human welfare and development (POPIN, 2013).

Nigeria, over the years, has been concerned over her fertility levels and trends, especially, the consequences of the negative effects of rapid population growth on development. With an estimated population of over 190 million people in 2017 and a population growth rate of 2.6 per cent per annum, Nigeria is Africa's population giant and the seventh most populous country in the world (UN, 2017). The population of Nigeria represents 2.57 per cent of the world's total population (World Data Atlas [WDA], 2017). Among the States in Nigeria, Cross River State with a projected population of over 3 million people, ranks the highest in terms of fertility rate (5.4) in the South-South Zone compared with other South-South States, especially, neighbouring Akwa Ibom (3.9) (NDHS, 2013; Ayara, Essia & Udah, 2013). The State has maintained a stable but high fertility rate of 5.5 from 2003 to 2013 and an annual growth rate of 3 per cent (NDHS, 2013). Given the annual exponential growth rate of the population at 3.0 percent, the population of the State increased to 2.9 million by 2006 from 1.9 million in 1991, and was estimated to be 3.8 million in 2016. The high fertility rate, which led to having high number of young persons who are future parents

constitutes an irresistible momentum for growth in the structure of the population. This has a lot of implications on quality of life, resources available for social services including education, health, as well as, economic growth and employment (NPC, 2009; UN, 2008).

Previous studies have shown that increase in population in most countries of the world have led to economic and social problems such as shortage of food, crime, unemployment, low per capital income, and overcrowding of cities (Adekunle & Otolorin, 2000; Choppin, 2009; Douglass, 2009; Ebingha & Eni 2015; Okpa & Ukwayi, 2017; Ukwayi & Okpa, 2018). Population growth creates highly unfavourable circumstances for socio-economic development and puts pressure on educational facilities where the additions to school age population are larger than can be absorbed in schools, leading to teacher-student ratio higher than 1:40 as recommended by the National Policy on Education (FGN, 2012). Also, healthcare facilities with 21 doctors per 100,000 people, infant mortality rate of 69 per 1000 live births, maternal mortality of about 560 per 100,000 live births, life expectancy at birth projected at 53.4 years for males and 55.6 years for females (World Health Organisation [WHO], 2017; Population Reference Bureau [PRB], 2015), housing, water supply among others that are not sufficient for the growing population in Nigeria (Oduwaye, 2009). The thesis of this study is to examine the effect of population growth on socio-economic development of Cross River State, Nigeria. The study hypothesized that: population growth does not significantly influence educational services in Cross River State in terms of school facilities, quality of education, and the ratio of teachers to students and that there is no significant influence between population growth and healthcare services in Cross River State as it relates to health facilities, services rendered and doctors to patients' ratio.

2. Theoretical framework

2.1 Malthusian population theory

Thomas Robert Malthus was the first scholar to propose a systematic theory of population in 1798. He articulated his views regarding population in his famous book, *Essay on the Principle of Population* (1798), for which he collected empirical data to support his thesis. Malthus posits that the pressure of increasing population on the food supply would destroy perfection and there would be misery in the world. Malthus used his theory to explain the relationship between the growth in food supply and in population, where he stated that population increases faster than food supply, and if unchecked leads to vice or misery. The Malthusian doctrine's major tenets were that there is a natural sex instinct in human beings to increase at a fast rate. As a result, population increases in geometrical progression and if unchecked doubles itself. Since population increases in geometrical progression and the food supply in arithmetical progression, population tends to outrun food supply. Thus, an imbalance is created which leads to over-population. To control over-population resulting from the imbalance between population and food supply, Malthus suggested preventive checks and positive checks.

Malthus distinguished between the two categories, i.e. the preventive check and the positive one. The preventive check consists of voluntary limitations of population growth. Individuals before getting married and building a family, make rational decisions based on the income they expect to earn and the quality of life they anticipate to maintain in the future for themselves and their families. The positive check to population is a direct consequence of the lack of a preventive check. When society does not limit population growth voluntarily, diseases, famines and wars reduce population size and establish the necessary balance with resources. According to Malthus, preventive checks are always in operation in a civilized society, for positive checks are crude. Malthus appealed to his countrymen to adopt preventive checks in order to avoid vice or misery resulting from the positive checks. Malthus' doctrine is illustrated below in Figure 1.

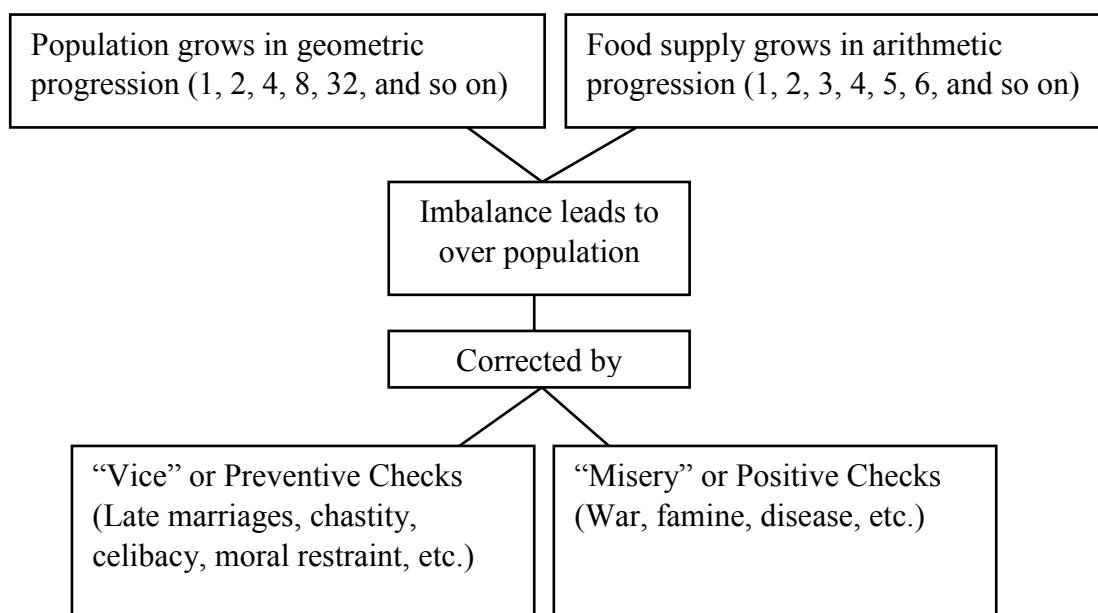


Figure 1: Malthusian theory of population
(Source: Smriti (2015))

The theory is relevant to this study because the predicted doom is manifesting, especially, in developing countries. Despite the impressive scientific progress of our century, the frightful Malthusian forces - poverty, famine, disease, and war - cast a dark shadow in our own times as they did in the nineteenth century. Indeed, the enormous power of modern weapons has greatly intensified the dangers posed by war; and the rapid growth of population in sub-Saharan Africa has given new dimensions to the problems of poverty and famine. In many large third world cities; issues like overcrowding, contaminated water, polluted air, dense population without adequate sanitation, low status of women, high birth rates, rapidly increasing population, high unemployment levels, crime, ethnic conflicts, and resurgence of infectious disease are also linked in a self-perpetuating causal loop - in this case a vicious circle (Avery, 2005, Weeks, 2002). The Malthusian model is considered accurate in pre-industrial societies but fails to work correctly in industrialized environments. Many writers like Ehrlich

and Ehrlich (1977) have criticized Malthus' postulation insisting that the problem is not that of too many people as claimed, but that of inequality. According to them, if inequality in resource allocation is controlled and family planning methods are conscientiously used to check population growth, then the consequences of continuous population growth can be checked.

2.2 Study area

This study was carried out in Cross River State, Nigeria. Cross River State lies between Latitudes 5° 32 and 4° 27 North and Longitudes 7°50 and 9°28 East. It shares a common boundary with the Republic of Cameroon to the East, Benue State to the North, Imo and Anambra States to the West and Akwa Ibom State to the South. Cross River is a state in Southern Nigeria sharing boundary with Cameroon in the east. Its Capital city is Calabar (Ukwayi & Okpa, 2017) Cross River State can be aptly described as a miniature nation because of its varied ethnic, cultural, and artistic nature. Most of the people of Cross River State speak any or all of their three major languages – Efik, Ejagham and Bekwarra. Other linguistic groups include Ekoi, Etung, Boki and Becheve. The people of Becheve in the North have a linguistic affinity with the Tiv of Benue State.

2.3 Materials and Methods

The research design adopted in this study is the survey design. This is because of its relative importance in the collection of accurate information from respondents at relatively low cost and greater efficiency (Ukwayi & Okpa, 2017). In addition, the design allows for random sampling and purposive selection of respondents, and the use of questionnaires (Burns, 2000, Isangedighi, Joshua, Asim & Ekuri, 2014; Ukwayi & Okpa, 2017). This study was carried out in Cross River State, Nigeria. According to the National Population Commission (2006), the geographic population of Cross River State was 2,892,988 people. The study population was made up of household heads in the study area, which according to the National Population Commission (2006) was 249,029. Since it was not convenient for the researcher to study the entire population, the sample size for the study was determined mathematically using Taro Yamane's (1967) sample size determination technique. The formula for Yamane's sample size determination technique is mathematically represented as:

$$n = \frac{N}{1 + N(e)^2}$$

Where:

- n = Sample size
- N = Total population (249,029 for this study)
- e = Error margin (0.05 on the basis of 95% confidence level).

From the above Yamane's sample size determination technique, the sample size for the study was calculated as:

$$n = \frac{249029}{1 + 249029(0.05)^2}$$

$$n = \frac{249029}{1 + 249029(0.025)}$$

$$n = \frac{249029}{622.58}$$

$$n = 399.99$$

$$n = 400$$

Thus, the sample size for the study was 400 household heads drawn from the population of the study.

Calculation of proportional allocation of sample for each stratum

Calabar South:

Population = 50165

$$\text{Sample} = \frac{50165}{249029} \times \frac{400}{1} = 81$$

Akpabuyo:

Population = 58427

$$\text{Sample} = \frac{58427}{249029} \times \frac{400}{1} = 94$$

Yakurr:

Population = 42955

$$\text{Sample} = \frac{42955}{249029} \times \frac{400}{1} = 69$$

Ikom:

Population = 38252

$$\text{Sample} = \frac{38252}{249029} \times \frac{400}{1} = 61$$

Obanliku:

Population = 24228

$$\text{Sample} = \frac{24228}{249029} \times \frac{400}{1} = 39$$

Obudu:

Population = 35002

$$\text{Sample} = \frac{35002}{249029} \times \frac{400}{1} = 56$$

Total = 81 + 94 + 69 + 61 + 39 + 56

Sample = 400

2.4 Sampling technique

The sampling technique adopted for the study was the stratified sampling technique. The sampling technique was used to select the areas of study and the actual respondents. Stratified random sampling technique was used to select six (6) local government areas from the eighteen (18) local government areas of the State. These local governments were Calabar South, Akpabuyo, Yakurr, Ikom, Obanliku, and Obudu. Six (6) council wards were then randomly selected from each of the local government area. The proportional samples were then randomly selected from each of the six wards, bringing the total number of households/respondents to four hundred (400). The main instrument of this study was a 27-item questionnaire. The data for the study were collected and analysed using tables, percentages and the Pearson Product Moment Correlation Co-efficient. The Pearson Product Moment Correlation Co-efficient were used to explore relationship that exist between population growth and variables. Each hypothesis was restated in null form as in chapter one.

3. Results and discussion of findings

The distribution of respondents on demographic data is indicated that 280 (70 percent) respondents were males, while, 120 (30 percent) respondents were females. This implies that the greater number of respondents were males. In age, 19 (4.75 percent) respondents were between the age bracket of 25 years and below; 41 (10.25 percent) respondents were between the age bracket of 26-30 years; 80 (20.00 percent) respondents were between the age bracket of 31-35 years; 101(25.25 percent) respondents were between the age bracket of 36-40 years; 123 (30.75 percent) respondents were between the age bracket of 41-45 years, while, 36 (9 percent) respondents were between 45 years and above. This implies that the greatest number of respondents were those between the age bracket of 41-45 years with 123 (30.75 percent) respondents. The responses on level of education showed that 42 (10.50 percent) respondents had no formal education; 98 (24.50 percent) respondents had primary education; 150 (37.50 percent) respondents had secondary education; while, 110 (27.50 percent) respondents had tertiary education. This shows that those who had secondary education with 150 (37.50 percent) respondents responded most to the questionnaire items.

In the occupation category, 98 (24.50 percent) respondents were civil servants; 64 (16.84 percent) respondents were farmers; 38 (9.5 percent) respondents were health workers; 100 (25 percent) respondents were students; 26 (6.5 percent) respondents were self-employed; 54 (13.50 percent) respondents were unemployed; while, 20 (5.00 percent) respondents were in other occupation. From the above analysis, it shows that the greatest number of respondents were students with 100 (25.00 percent) respondents. In respect to religion, 290 (73 percent) respondents were Christians; 10 (3 percent) were of the Islamic religion; 62 (16 percent) were Traditional worshippers, while, 38 (10 percent) belonged to other forms of religion. This shows that those that were Christians are greater in number 290 (73%).The compartmentalization of respondents in terms of

income level per annum revealed that 35 (8.75 percent) respondents earn below N100,000; 80 (20 percent) respondents earn between N100,000 to N200,000; 90 (22.50 percent) respondents earn between N200,000 to N300,000 and 64 (16.00 percent) respondents earn between N300,000 to N400,000; 61(15.25 percent) respondents income is between N400,000 to N500,000, while, 70 (17.50 percent) of respondents earn above N500,000.00. Based on the above distribution, those who earned between N200,000 to N300,000, being 90 (22.50 percent) were the highest, and a clear reflection of the state of our economy.

In respect to family size, 70 (17.50 percent) respondents have a family size of between 1 to 3 children; 250 (62.50) respondents have a family size of between 3-6 children; and 74 (18.50 percent) respondents are with a family size of 6 to 9 children, while, 6 (1.50 percent) respondents have a family size of 9 children and above. This revealed that 250 (62.50 percent) of the respondents still settle for between 3 to 6 children, supporting the fact that fertility still remains high in Nigeria, and CRS in particular.

3.1 Test of hypotheses

3.1.1 Hypothesis one

Population growth does not significantly relate with educational services in Cross River State in terms of school facilities, quality of education and the ratio of teachers to students is the null of hypothesis one. The independent variable involved in this hypothesis is population growth, while, the dependent variable is educational services. To test this hypothesis, Pearson Product Moment Correlation Coefficient was used. The result of the analysis is presented in Table 4.2. The result in Table 4.2 show a correlation coefficient of 0.913 indicating the existence of a very strong positive relationship between population growth and educational services in terms of school facilities, quality of education and ratio of students to teachers. The test was significant at 0.01 significant level, and led to the rejection of the null hypothesis which states that population growth does not significantly relate with educational services in Cross River State. The alternate hypothesis is therefore retained. The interpretation of the result is that population growth significantly relate with educational services in Cross River State.

3.1.2 Hypothesis two

The null of hypothesis two stated that there is no significant relationship between population growth and healthcare services in Cross River State, as it relates to health facilities services rendered and doctors to patients' ratio. The independent variable involved in this hypothesis is population growth, while, the dependent variable is healthcare services. To test this hypothesis, Pearson Product Moment Correlation Coefficient was used. The result of the analysis is presented in Table 4.3. The result in Table 4.3 show a correlation coefficient of 0.866 indicating the existence of a very strong positive relationship between population growth and the problems of urbanization in

terms of housing, water supply and unemployment. The test was significant at 0.01 significant level, and led to the rejection of the null hypothesis which states that there is no significant relationship between population growth and the healthcare services in Cross River State, while, the alternate hypothesis is retained. The interpretation of this result is that there is a significant relationship between population growth and healthcare services in Cross River State.

Table 1: Correlation result of relationship between population growth and educational services in Cross River State

		Population growth	Educational services
Population growth	Pearson Correlation	1	.913**
	Sig. (2-tailed)		.000
	Sum of Squares and Cross-products	281.240	303.690
	Covariance	.705	.761
	N	400	400
Educational services	Pearson Correlation	.913**	1
	Sig. (2-tailed)	.000	
	Sum of Squares and Cross-products	303.690	393.078
	Covariance	.761	.985
	N	400	400

** . Correlation is significant at the 0.01 level (2-tailed).

Table 2: Correlation result of relationship between population growth and healthcare services in Cross River State

		Population growth	Healthcare services
Population growth	Pearson Correlation	1	.866**
	Sig. (2-tailed)		.000
	Sum of Squares and Cross-products	281.240	182.980
	Covariance	.705	.459
	N	400	400
Healthcare services	Pearson Correlation	.866**	1
	Sig. (2-tailed)	.000	
	Sum of Squares and Cross-products	182.980	158.710
	Covariance	.459	.398
	N	400	400

** . Correlation is significant at the 0.01 level (2-tailed). Source: SPSS Analysis

4. Discussion of findings

4.1 Population growth and educational services

The result of the statistical analysis of hypothesis one, revealed that population growth has a significant influence on educational services in terms of school facilities, quality of education and the ratio of teachers to students. From the analysis the value was positive, which indicated that the more rapid the population grows the more it will tell on the inadequate educational resources, as well as, on the quality of service delivery,

thereby, hindering the socio-economic development of Cross River State, Nigeria. Therefore, more educational facilities and well trained teachers are needed to improve on the quality of education and to reduce the pressure mounted on existing facilities. The above findings are supported by Asiyai and Ajudeonu (2010) who stated that academic performance and quality of students depends on the effectiveness of instruction provided by teachers.

Many scholars and policymakers noted that high levels of educational achievement were associated with more moderate rates of population growth, suggesting that important opportunities for alleviating population pressures might be found in ensuring greater access to education, particularly, for females, and that future trends in global population growth could be significantly affected by improvements in both the quality and quantity of education. According to them, projections of future population trends that do not explicitly include education in their analysis may be flawed (UN, 2015; POPIN, 2013; Beall & Fox, 2009). In a similar view, Schaefer (2008) asserts that one of the more sophisticated arguments against population growth is that it reduces the amount of education that children receive. He went further to consider it as the most important drawback of population growth in less developed countries. Also, Julian and Adam (1979) opined that the effect of additional persons upon the stock of physical capital would not be hard to overcome by a reduction in consumption in order to increase the amount of investment. But one must also consider the additional investment in human capital through education that is required for additional people if the level of education is not to be lower than otherwise. Taking both the physical and human capital effects together, the overall impact of fast population growth would require a very large diversion of consumption into savings if the society's productive level is not to be affected negatively by population growth.

4.2 Population growth and healthcare services

The result of statistical analysis of hypothesis two revealed that population growth has a significant influence on healthcare services in Cross River State. From the analysis, the value was positive which indicated that the more rapid the population grows the more it will tell on the inadequate healthcare facilities, as well as, on the service delivery, thereby, hindering the socio-economic development of the people. It shows that more healthcare facilities and personnel are needed to improve on the service delivery and reduce the pressure mounted on existing facilities. The philosophy there is that the more the improvement in the healthcare facilities/services, the healthier the population and workforce, as well as, reduction in mortality rate. The finding corresponds with Bloom and Canning (2001) and Kalemli-Ozcan, (2002), that mortality decline leads to socio-economic growth, as it increases investment in both physical and human-capital via increased savings rates and education.

Studies on the relationship between health and development have grown over time. There are, at least, three channels that have been identified in arguing that the health of a population matters for growth and development (Musibau, 2015; Aghion, Philippe, Peter, Howitt, Fabrice, & Murtin, 2010). It is posited that; first, higher life

expectancy is likely to translate to higher domestic and national savings which in turn implies higher capital accumulation, which again feeds back to higher socio-economic growth. Second, higher life expectancy could imply higher investment in education (individually or by the parents) which implies higher human capital formation, which is also expected to translate to socio economic growth (Jayachandran & Lleras-Muney, 2009; Miguel & Kramer, 2004; Zhang and Lee, 2003). Improvements in health raise the incentive to acquire schooling, since investments in schooling can be amortized over a longer working life. Healthier students have lower absenteeism and higher cognitive functioning, and thus, receive a better education for a given level of schooling. It is argued that low child mortality could translate to low fertility rate which in turn slows down population growth, and thus, could translate to higher per capita GDP (Murin, 2009; Duraisamy & Mahal, 2005). Third, it is posited that better health could imply higher productivity, more creativity and better adaptation to technologies. Healthier people are better workers. They can work harder and longer, and also think more clearly.

5. Conclusion and recommendations

Population growth ordinarily would not be a cause for concern since in certain circumstances, a large population could be of advantage to a country in terms of the sheer size of its domestic market, better division of labour, increased productivity through improvement in the ratio of labour force to population as well as enhancement of its political and military power. A large population also diversifies the demand for products and services and promote the tendency to increasing returns, thereby, raising economic development. But in developing countries, especially, in sub Saharan African countries, it has been admitted that population growth puts severe pressures on existing resources as demonstrated by this study.

The population situation of any society is an important factor in the socio-economic development of such a society. It is a vital part of the economic system and if not effectively managed could affect other sectors of the economy. The prevailing situation calls for urgent actions, so as to stem the tide of social and economic decay sweeping across our society. The analysis of Cross River State population shows that the population is characterized by high population growth rate which negatively affect the socio-economic wellbeing of the people; therefore, measures must be taken to check this trend in the State. Finally, it is opined that rapid socio-economic development demands the exercise of deliberate control over the demographic variables, because lack of control would amount to gross neglect of an important development factor that would be consequential to effective development planning.

Based on the problem, the objectives and the findings of the study, the following recommendations were made to the government of Cross River State in particular, and Nigeria in general:

1. More educational facilities and well trained teachers are needed to improve on the quality of education and to reduce the pressure mounted on existing

facilities. Therefore, there should be strategies, ways and means to improve educational services, especially, in the areas of school facilities, quality of education and teacher - students' ratio.

2. The government of CRS should prioritize the healthcare of her citizens, re-examine the healthcare policies of the State, so as to explore ways and means to improve on the health facilities, services rendered, as well as, doctor to patients' ratio.
3. There should be proper sensitization to clear doubts on the obstacles to effective population control such as religion, population education, culture and normative system in favour of high fertility.

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