COMPUTERIZATION OF POPULATION GROWTH RATE IN NIGERIA

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CERTIFICATION

I certify that this work was carried out by Mal. Usman Yahaya Baba in the Department of Mathematics and Computer Science, Federal University of Technology Minna, Niger State.

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DEDICATION

This Project is dedicated to Allah (S.W.T) , the most wise

ACKNOWLEDGEMENT

In the name of Allah most gracious, the most merciful.

May the Peace and blessings of ***Allah*** be upon his last prophet (***S.A.W***).

Praise be to **Allah** the lord of the universe who has guided and guarded me from the beginning of this course and now to the end.

I must express my unalloyed appreciation to my project supervisor, ***Dr. Yomi Aiyesimi***, for his unequalled supervision of this project. My humble respect also goes to the H.O.D, Maths/Computer Science, ***Dr. S.A Reju*** for his role as a father to all students and staff of Maths/Computer Science department.

I sincerely acknowledge the ***Director*** and entire staff of ***AMI-TECH Computer Systems*** and to all those that have been used by Allah ***(S.W.T)*** in one way or the other to assist me in the course of my study here in FUT Minna. I say; ***BARAKALLAHU FII KUM.(***Amen)

I will not forget to mention the ***Allah's gift*** for me that has totally transformed me from Bachelorhood at the middle of this programme. My-Allah-Given-Love ***'Khadijat;*** I do sincerely appreciate all your moral support accorded me during the bustling and Hustling of this programme.

ABSTRACT

The rapid nature of the growth rate of Nigerian population has attracted so many opinions from so many persons across the world. Some school of thought believed that Nigeria will have population explosion if steps are not taken to control the birth of children. This fear is not well founded as the result of our research work shows in this study. These controversies have actually prompted this project work and hence the development of a computerized system capable of handling the computation of population growth rate, sex population growth rate, estimation of population total and general sex ratio. The study highlights the history of Nigeria population pre and post-colonial era and the extent at which population counting has been politicized. The only source of population data in Nigeria; the periodical census of population was discussed in detail. The developed software package, "POPULA" was test run with population data collected from Federal Office of Statistics and the analysis revealed a lot of interesting findings and concluded that the upward growth of Nigerian population is much to the advantage of the country as population itself is an asset of a country if better managed and put into better use.

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CHAPTER ONE

1.0 INTRODUCTION

1.1. HISTORY AND GROWTH OF NIGERIA POPULATION

The population of a country is the sum total of the number of human bodies of all ages who inhabit the territory at a given time. In the beginning, Allah (SWT) created the world and population started with two and eventually the scattering of the tribes and emergence of different languages. One must accept the fact that this time, the population was so small that nobody bothered to count less to think of the growth rate. Nigeria today, is the most populous African country South of Sahara. Made up of numerous ethnic groups, the country has three large groups, the Hausas in the North, the Ibo in the East and the Yoruba's in the Southwest and minority groups in the middle belt and Southern parts. Today we bother to count. We bother because;

a. Population has become a status symbol in the community of nations. Small countries come after big nations unless they are otherwise powerful. In the same way, big nations command greater respect than smaller ones.

b. Agriculture, both ancient and modern requires many hands at work and it is useful to know how many hands are actually available.

c. The principles of planning for development are now universally accepted. Realistic planning is impossible without a clear and correct knowledge of who to plan for the number, the age distribution, the sex, the literacy level, and other vital information.

d. The allocation of resources and sharing of social amenities among competing communities must be based, at least in part on the size of the population.

e. The determination of parliamentary seats and the delimitation of electoral or administrative boundaries at various levels of government is inextricably bound up with population figures.

In Nigeria, the population question has assumed serious acrimonious and some times terrifying dimension. The basic question is: "How many are Nigerians"? Everyone is familiar with the various effort made by Nigeria Nation to count itself long before independent and after it. Thirteen (13) population census have been conducted in Nigeria. These were in; 1866, 1868, 1871, 1891, 1901, 1911, 1921, 1931, 1952/53, 1962, 1963, 1973, 1991.

The first seven (07) census were undertaken before Nigeria, as one country came into existence on 1st January 1914. Six (06) of the censuses covered only Lagos and its environs. But the seventh included the protectorates of Northern Nigeria and Southern Nigeria. The 1911 census recorded a population of 16.06 million for Nigeria, with the Southern provinces having 7.94 million and the Northern provinces, 8.12 million.

Ten years later, the population of Nigeria was given as 18.7 million, with 8.16 million for the Southern provinces and 10.56 million for the Northern provinces. In 1931 the population of Southern province rose 11.435 million, of a total of 19.928 million. It is the view of professor Samuel Aluko, the re-known economist, that "it seems obvious that all population figures between 1900 and 1931 were largely inaccurate and may have been consistently underestimated". But we do know that universal enumeration of heads did not take place in any of the censuses. The figures were either estimates or calculations based on existing records. By the time of the next census (post - colonial census), constitutional changes begun to take place. The exercise coincided with the introduction of a new constitution providing for the first time for a forum of representative government. Elections were held into Regional legislation and these were used as electoral colleges for elections into Federal House of Representatives. The first Nigeria ministers were appointed party politics, with a view to wining political power, become a reality. Northern Nigerians and Southern protectorate found themselves for the first time, having an effective say in the government of their own country. It was in this atmosphere of a new awareness of political power that the 1952/53 census was conducted between 1950 and 1953.

The council importance of numbers downed on everybody. The figure recorded for the whole country was 30.417 million, of which the Northern region had 16.840 million, the Western region 6.087 million with the Eastern region 7.218 million and Lagos 272,000. This was the last census conducted under the segis of the British government. It was the first comprehensive enumeration ever done in the country. But although it was officially declared to be 95 percent successful, there were many communities that were completely omitted as a result of incomplete coverage. The main focus of activities in 1952/53 census was that, more than half of the recorded population (16,840,000) was credited to the North, and Southern politicians saw it as a deliberate device of the British government to give the North an advantage over the South. It was surprising, therefore, that the 1962 census, the first to be held after independence, aroused such great controversy that it had to be canceled.

In 1962 the relationship between the two coalitions partners in the Federal government (N.P.C. and the N.C.N.C) had begun to sour. The two political parties (representing the Northern and Eastern regions respectively accused each other of inflating the figures in its area of control. In July, 1962, 42 million was given as the total population; In January 1963 this was changed to 52 million. These result was incidentally canceled as a result of the press over and the high political tension generated. A new census was ordered and this resulted in 55.69 million for the nation of which the North was 29,809 million, the West 10,266 million, the East 12,394 million and Lagos 665,000 million. Two regional governments, the Eastern and the Midwestern, both of whom were controlled by the N.C.N.C. rejected the results. But the Federal government accepted it.

The worst of our census experiences came in 1973 when a Census Board, headed by the former chief justice of the federation, Sir, Adetokumbo Ademola, returned a total figure of 79.9 million, an increase of 24.09million or over 43 percent more than the last census. General Yakubu Gowon accepted the result in spite of the fact that there was no general acceptance by Nigerians. Chief Obafemi Awolowo, in one of his speech as the Chancellor of the University of Ife on July 16th, 1974, also criticized the census figure by saying "I have examined this result from several standpoints which time does not permit to elaborate upon here and as a result I have been irresistibly impelled to the conclusion

that the so-called provision figures are absolutely unreliable and should be totally rejected by the Supreme Military Council". "Chief Awolowo urged that the nation should prefer the 1963 census results because they are least bad, the least ugly and therefore the most acceptable of all our bad, ugly and disputable census results from 1931 to 1973". Then the government of Murtala Mohammed that ousted General Yakubu Gowon from power incidentally canceled the results and returned the country to 1963 population figures.

The best and the most universal accepted head count in Nigeria came through in 1991. This time the census exercise was handled by a census body, National Population Commission (NPC). The commission was inaugurated in April, 1988 and charged with among other responsibilities, the conduct of hitch free National Population Census, and the establishment of universal continuous registration of births and deaths. This commission was headed by Alhaji Shehu Musa, as the chairman, National Population Commission. This most recent and most successful census taken in November 1991, put the population at 88,992,220 million persons, with the growth rate of 2.83%. That is the journey so far as we are also on the road again to another census in the year 2001.

1.2 AIMS AND OBJECTIVES OF THE PROJECT

The aims and objectives of this projects are:-

1. To computerize the computation of the population growth rate of Nigeria which is presently growing at a faster rate than the food supply and exploitation of developed resources.
2. Identify the various uses to which population data are put and, therefore develop and understanding of the importance of and a sense or responsibility towards population census enumeration and registration of vital statistics.
3. Explain how population situation of the household and national levels affects the patterns of demand for the consumption of goods and services.
4. Recognize the various ways in which population growth, the constraints on resources development and the pattern of consumption of the family level etc. have contributed to the present state of the economy and quality of life situation in Nigeria.

5. Compare and contrast the population/resources situation in Nigeria with that in other countries so as to have an insight into the international dimensions of the population and family life problems.

6. Highlight the importance of self-sufficiency in food production and the dangers of dependency on food imports and food aids.

7. Recognize the implications of the increasing gap between birth and death rates for the provision of such basic facilities and services such as schools, health, water and housing.

1.3. SCOPE AND COVERAGE

The population studies carried out in this project covers Nigerian population data pre- and post - colonial era. The program developed have been designed to handle the computation and the analysis of:-

1. Population growth rate
2. Sex population growth rate
3. Estimates of population total and
4. General sex ratio

For the purpose of this project we have considered data on the Nigerian population from 1963 to the most recent, 1991. Our choice of base period and the current year population total depends on the growth rate of the population for the period we are computing.

1.4 LIMITATION

One of the major limitations of this study is probably the lack of universal acceptability of most population figures as generated from Nigeria population census over the years. Population census has never been accorded 100% acceptance in the country from the pre-colonial and to the most recent 1991 census (post-colonial). The reason could be because the census activities in Nigeria have been politicized.

Another limitation of the study is the logistic drawbacks we encountered in trying to put this project together.

1.5 DATA FOR THE PROJECT

The data for the project was collected in the form of secondary data. The data was extracted from the publications of the Nigerian Population Association (Proceeding No. 7), 1988 edition and the Annual Abstract of statistics (1997) edition, a publication of Federal Office of Statistics (FOS), Abuja. The study covers the pre and post-colonial census activities of Nigeria.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.0.1 THEORY OF POPULATION GROWTH

It is hardly necessary to emphasize the important part of which a study of population movements play in the social sciences. The balance between population and resource is a problem which has been of great interest to economist since the days of Malthus and interest in it has been revived today in the study of the economics of the so-called under-developed areas. This balance exert great influence on the standard of living enjoyed in any giving area, and a knowledge of how population growth has behaved in the past and it is likely to behave in the future is of the first importance. The components of population growth are fertility, morality and migration. These three factors continuously operates in a population and determine the size and growth of the country at a particular point in time.

2.1.1 POPULATION THEORISTS

Several population theorist have proposed several theories about population and its growth.

1. ARISTOTLE (384-322) BC and Plato (427-347) BC proposed theories that support stationary or fixed population. And maintenance of stationary population, they proposed checks and balances like Immigration and Emigration coupled with control of marriage and reproduction.

2. Ibn Khaldun (1326-1406). Observed that there is high fertility and low mortality in youth and a decline in fertility and high mortality in their high stages. He favoured high growth in population based on some checks and balances. He also held the opinion that standard of living and wealth of society will depend on the number of its members also advanced on the political and military factor.

3. Nicholo Machiavelli (1409-1527) hold the opinion that resources increases population and that the increase is desirable, but he added that over abundant population would be

reduced by poverty and disease, i.e. he anticipated for positive checks to population growth.

4. Giovani Botero (1540-1617): He agreed that population growth depends on the power of reproduction and means of subsistence. His work was later developed by Rev. Thomas Malthus 200 years later.

5. Reverend Thomas Malthus (1766-1834):

He is generally considered the father of substantial demography and is certainly the better known. Basically, Malthus principle of population was that human population tended to increase at a more rapid rate (geometric) than the food supply rate (arithmetic) to sustain them. To balance the two, checks was recommended. These checks was moral restraint, i.e. postponement of marriage without extra marital affairs.

Finally, it should be noted that Malthus great hope "MORAL RESTRAIN," delayed marriage did not encompass abstinence or any birth control. Other great population theories are Jean Bodin (1530-1596), John Graunt and Sir William Petty who criticized Aristotle and Plato for recommending stationary population and very much in support of high population.

2.2.0 SOURCES OF POPULATION DATA

Data on population are acquired through the following sources;

I. Periodically through census

ii. Continuously through vital registration

iii. Demography sample, and in some cases

iv. Through civil registration or record system

2.2.1 POPULATION CENSUS

In this study we shall focus our discussion on population census as a source of population data in Nigeria.

In Nigeria we do not have an organized system for all other sources listed above. Even though the National Population Commission is charged with the responsibilities in addition to census taking to established a universal, continuous registration of vital events (i.e. births and deaths). The vital registration in Nigeria still remain unsatisfactory and

full of defects. The Nigerian question is "How many Nigerians report their births and deaths"?. The only cases of births and deaths on records are those that take place in the hospital and the few that register their birth with N.P.C. Population census is the Major sources of population data in Nigeria.

2.2.2 DEFINITION:

A Population census is a total process of collecting, compiling, and publishing demographic economic and social data pertaining at the specified time to all persons in a country or delimited territory, this involves the collection of data on the total number of persons, their composition (age, sex, marital status, etc). The dynamics (fertility, mortality, migration) and their special distribution location. It is a massive, complex and costly statistical operation. Usually this exercises is carried out mainly by the government, taken at regular intervals say five (05) or ten (10) years to ensure comparable information are obtained in a fixed sequence. Census in Nigeria is British adopted. I.e. it is a ten yearly exercise with years ending in '1' between 1931 and 1971. However, the two census conducted after the interruption created by the world war 11 in 1952/53 and 1962/63 took place in years ending with '2' or '3'. It appears that the 1991 census has begun a new series of census to be conducted in years ending with '1' as the road to the year 2001 census is becoming clearer every day of the year as we are moving in to the next millennium in less than 40 days time.

2.2.3 PLANNING AND EXECUTION OF CENSUS

(i) Decide on the system of enumeration to be used.

(ii) Decide on the data of the census and set out pre-census proggramme

(iii) Decide on the type and content of the questionnaire

(iv) Test all forms and procedures involving final pre-test

(v) Prepare detail maps and list all dueling

(vi) Recruit and train the field staff of the data

(vii) Inform the public and obtain their co-operation

(viii) Plan the programme for processing of the data

2.2.4 METHODS OF ENUMERATION

There arre two bases on which census count maybe taken:-

(i) Defacto and

(ii) De-jure

A DEFACTO COUNT: Is a count of those persons who happen to be present in a particular place at the time the census is being taken, whether or not that place is their permanent residence.

A DE-JURE COUNT: Is a count of those persons who make their permanent residence in a particular place at the time census is being taken whether or not they are present at the time the census is being taken. These methods have advantages and disadvantages over the other. Theoretically speaking both method should yield the same total population provided there is no migration in and out of the country. However, in Nigeria, the method of count adopted during the 1991 census count was the de-facto procedure. It should be noted that it is clearly better for a census to be conducted at a time when population movement is at a minimum.

2.2.5 COLLECTION PROCEDURE:

There are three (03) main collection procedures in census counts:

ENUMERATION METHOD: trained paid enumerations go from house to house within a specified area and secure the required detail by questioning an individual or family head. The advantage of this is that enumerators are trained and would be to report accurately. The disadvantage is that it is costly.

HOUSE HOLD METHOD: Census questionnaires are handed out in advance to leaders of household for completion. The censuses enumerators collect from the household and at the time reviews, corrects and complete the return. The advantages are:

- Ample time
- Less chance of missing those who are temporarily absent.

The disadvantages are:

-Questions are few

-Questions may be misinterpreted and

-Lack of interest in form completion.

MAIL-OUT MAIL-BACK TECHNIQUE: Is a self enumeration method starting with a commercial mailing list, card are made up of each residence. These cards are turned over to the post office which has local postmen check the cards. Non-existent address are deleted, incorrect addresses are corrected and missing addresses are added.

2.2.6 IMPORTANT FEATURES OF A CENSUS

I. INDIVIDUAL ENUMERATION: Each person must be counted individually and the characteristics recorded.

II UNIVERSAL OPERATION: It is an operation that is peculiar to a precisely defined territory i.e. every one in the territory must be count

III SIMULTANEOUS OPERATION: The counting of the people must take place at the same time in a given geographical area.

IV DEFINED PERIODICITY: Census must be conducted with some degree of regularity to make the data comparable with international census (i.e. 10 years interval)

V. LEGAL BACKING/GOVERNMENT SPONSORSHIP

It is the government in the geographical location that will give the census some legal backing, an individual cannot carryout census exercise. Government financial backup is very necessary.

2.2.7 PROCEDURES OF POPULATION CENSUS

There are three (03) main phases namely:-

Pre-enumeration phase

Enumeration phase and

Post enumeration phase

1. PRE-ENUMERATION PHASE

Planning, doing the preparatory work before the actual counting. The phase usually starts at least 3 years before the actual enumeration according to UN recommendation. Government at this stage highlights by way of creating series of awareness programmes stating reasons why census should take place and encouraging the entire population to participate. At this stage a body to conduct the counting is set up if there is non-existing. This body will be responsible for all the geographical works such as updating maps, list of enumeration areas, demarcation and geographical boundaries fully established, data needs for Federal, State and Local government are put into consideration. Equipment's has to be acquired i.e. stationeries, buses etc. Also recruitment and training of enumerators to be used for the actual head count will commence.

This stage can be subdivided into pre-test and trial census. Pre-testing enable the counting body to asserting the adequacy and suitability of the questionnaires, determine the workload for each enumerator. This was the same principle embarked upon by the National Population Commission in the conduct of the 1991 census. Less attention to this stage will mean failure of the whole census exercise. In fact the failure to produce accurate and acceptable censuses in the past before 1991 census has been attributed to several factors and most of these factors where from the pre-enumeration stage.

2. ACTUAL ENUMERATION PHASE

It takes a relatively short time compared with other phases. It comprises of taking the questionnaire into the field for the purpose of obtaining the required information. The supervisor and enumerators are on the field and counting depends on whether it is de-facto or de-jure method. While enumeration is on, the supervisors do some cross checking on the field. At times the supervisor take part in the enumeration on the field to ensure that interviewing actually took place. Returns are sent to the main office at the completion of the exercise. In the census of 1991, attempts were made to reach out to all

categories of persons in the population such as the Nomads, Seasonal migrants, Persons, Women in pedal etc. with a view to ensuring that they are reached and actually counted at sight.

3. POST-ENUMERATION

Here the processing of the data obtained raw from the field now takes place. It includes, editing, coding and tabulation, analysis and report writing.

This stage also includes a post-enumeration survey, which is usually organized to defect the systematic error if there are any in the actual head count. It is also used in evaluating the census results. After taking the internal consistencies the results are published.

2.28 POPULATION REGISTERS

This is a continuous registrations of vital events (births, deaths, migration, marriages etc) on a card for each individual from time of his or her birth (or immigration) till his death (or immigration) this is further updated continually by recording such additional registration data such as marriage, divorce etc.

Population registers are maintained in most of the developed countries.

MERIT: The system includes the completeness of coverage, accuracy, contact with individuals if required and the possibility of drawing specific samples of the population.

DEMERITS: High cost to set up and maintenance. The need for a high cultural and educational level and the fact that the existence of such record is regarded by many as an invasion of civil liberties.

2.29 OTHER SOURCES

Apart from sources discussed above, there are many other sources of population data. There are usually records held by various government and semi-government departments, which are useful in demographic analysis. Some examples are data on registration for military service, employment statistics, social service records about pension and child endowment, vital statistics etc.

2.30 SEX COMPOSITION

Most easily measurable, and of fundamental importance both demographically and socially, is a population composition by sex. In any given area, the distribution of the sexes tends to be unequal, owing to the operation of any or all of three factors. First, a different sex ratio at birth is universal, more males are born everywhere than females. On the other hand, at all ages the death rates for males are usually higher than those of the females.

Finally, migration is sex selective, in long distance migration, males tend to outnumber females, but in short distance migrations females usually predominate. The most frequent measure employed in the study of sex composition is the sex ratio: the number of males per 100 females. It is easily computed by dividing the males in the population by the number of females and then multiplying by 100.

The ratio of sexes in a given area has an important bearing upon incidence of marriages, births, and deaths. The number of possible marriages depends in port upon the population of the sexes in the marriageable ages. The surplus of women in the urban areas reduces their chances of finding a marriage partner. Whereas their short age in rural areas may create difficulties for eligible young men. An imbalance of the sexes will delay marriage and reduce the number of legitimate births. Because mortality rates among males tend to be higher than among females, a disproportionate sex ratio also affects the overall death rate.

CHAPTER THREE

3.0 SYSTEM ANALYSIS AND DESIGN

3.1 DEFINITION:

System Analysis is the process or activities involved in examining an already existing system (manual) or computerized system for new system to be introduced. The Analysis is carried out by the system analyst and with the primary aim of obtaining complete and authentic information which will acquaint the analyst with the knowledge of prevailing situation so that the feasibility study of designing an effective computerized system can be known. On the other hand, System Analysis can also be defined as the process of answering questions about how System under investigation actually works. Answering questions of course, must be proceeded by gathering information that start with preliminary investigation, feasibility study, fact finding, fact analysis, system design, system implementation, system review and maintenance and system documentation.

3.1.1 FEASIBILITY STUDY

Feasibility study was carried out on the existing system and the following reasons were deemed necessary for the change over for the new proposed system.

- The existing system or the current system is based on manual operation and it makes the computation. Susceptible to computational error.
- Speed of operation is low and accuracy of the result is not always perfectly assured. Wrong computation or error in computation can give rise to misleading report, which consequently affect decisions based on such reports.
- Minimum labour will be needed for the new system to be in perfect operation.
- The manual computation associated with existing or current system is tedious as it involves large volume of data.
- The process of computation is repeated over and over again, anytime population changes and new data is collected.

3.1.2 METHOD OF INVESTIGATION

Data and information on the current system was obtained by interview method. Personal interview was conducted among the staff of the research department of the National Population Commission, Abuja. And most of the information gathered aided the identification of the weakness of the current system and the necessities of the proposed system (computerize approach).

3.1.3 THE EXISTING SYSTEM AND PROBLEMS ASSOCIATED

The existing system is adopted by the research department of the National Population commission, to compute;

1. The rate of growth of population
2. Sex population growth rate (for the male and female in the population).
3. Estimates of population totals and
4. The general sex ratio of the country.

3.1.4 PROBLEM ASSOCIATED

Among others as discussed in 3.1.1, the storage of result and data collected is crude and unsecured. File jacket containing information can easily be misplaced, lost or get damaged by termites.

3.1.5 OBJECTIVES OF THE EXISTING SYSTEM

The objective of the current system is to collect the census figures subject it to manual computation and generate the population growth rate, sex population growth rate, estimated population totals and general sex ratio. These information are used for comparative analysis between the growth of the population and development of various areas of the economy by Statistician, Demographers and Economist. These analysis form the basis of the Government policy formulation on economic planning.

3.1.6 THE MANUAL COMPUTATION

The equipments employed in the current system for the computation are;

- Table calculators (scientific type)
- Biros, pens and pencils
- Rulers
- Sheets of paper

Computational formula is as follows: -

1. Population Growth Rate (PGR)= $\left[\sqrt[t]{\frac{p1}{p0}}\right] - 1 - - - - eqn3.0$

Where P_0 = the base year population total

P_1 = the current year population total

t = the time interval between P_0 and P_1

The percentage PGR = PGR x 100

2. Estimated Population $(P_1) = P_0 (1+r)^t$ ----------$eqn3.1$

Where r is the population growth rate and P_0 and t is as defined above

3. Sex population growth rate = $\left[\sqrt[t]{\frac{p1}{p0}}\right] - 1 - - - - eqn3.2$

Percentage SPGR = SPGR x 100

5. General Sex Ratio = $\frac{Allmale}{Allfemale} x100 - - - - - 3.3$

3.2 THE PROPOSED SYSTEM

The new system proposed to take over the manual computation of population growth Statistics is the computerized system. Here computer program is developed and customized to compute generate and store the information. These information are the

population growth rate, sex Population growth rate, estimated population totals and general sex ratio and their interpretations. The software is called "POPULA".

3.2.1 ADVANTAGES

Speed and Accuracy: The speed of computations and the results are accurately generated once data entered are correct.

Automatic: Computation and the result generated is automatic

Storage: The result of computation is stored automatically and security assured. Retrieval or print out can be made when so desired.

Efficiency: The new system is more efficient.

Reliability: The new system is more reliable as large volume of data can be processed in the shortest possible time and the machine will not be tired.

Flexibility: The new system is flexible as the program can be modified, updated to suite ones desire at anytime. Additions of new features can also be made to the program to perform more jobs depending on the demand.

3.2.2 DISADVANTAGES

The disadvantage of the new system is that it is expensive to set up and run.

3.2.1 OBJECTIVES OF THE PROPOSED SYSTEM

The objectives of the proposed system are: -

To develop a users friendly, Y2K compliant software package that will enable the computation and generation of population growth statistics such as, the growth rate, estimates of population totals and general sex ratios. These statistics will help the economist to carry out comparative analysis between the population growth of the country and development of the various areas of the economy. Government uses this kind of analysis in formulating economic policies tailored towards achieving an end. Such ends among others are: -

i. Full employment; that is work for all persons of working age.

ii. Power; that the full range of means that can be set to work to obtain a collective end whatever the end may be.

iii. Long life and good health

iv. Knowledge and culture

v. Aggregate welfare or put in a slightly different way the aggregate of the population as a whole.

vi. Average standard of living

3.3.0 INPUT SPECIFICATION

The input specification is an interactive avenue where the computer and end-user communicated via the use of the popular input devices i.e. the keyboard and the mouse. The new system has been designed to fit keyboard and mouse as its input devices. The input design consist of

1. The base year
2. The base year population total
3. The current year
4. The current year population total
5. Male and female population total for both current and base years.

3.4.0 OUTPUT SPECIFICATION

Output refers to the result and information that are generated by a system. The output of a computer system is required primarily to communicate the result of processing to users or other systems or more importantly to provide a permanent (Hard) copy of this result for decision making. The output devices for the new system are mainly the monitor and printer. The output design for the proposed system consists of four different reports. Each reports generated represents each of the four (4) optional areas of computation the program has been designed to handle. The various reports are contained in the output file. The outlooks of the reports are sketched below: -

RPT 1.**COMPUTATION OF POPULATION GROWTH RATE**

YEAR	TOTAL POPULATION (IN MILLION)	GROWTH RATE

REPORT 2. **COMPUTATION OF SEX POPULATION GROWTH RATE**

YEAR	TOTAL POPULATION (IN MILLION)		GROWTH RATE %	
	MALE	FEMALE	MALE	FEMALE

REPORT 3. **COMPUTATION OF ESTIMATED TOTAL**

YEAR (BASE)	BASE YEAR TOTAL POPULATION (IN MILLION)	GROWTH RATE	YEAR ESTIMATED (CURRENT)	ESTIMATED POPULATION TOTAL

REPORT 4. **COMPUTATION OF SEX RATIO**

YEAR	TOTAL POPULATION (IN MILLION)		SEX RATIO	REMARKS
	MALE	FEMALE		

3.5 SYSTEM REQUIREMENTS

The system requirements consist of the hardware and software requirements. To make maximum utilization of developed system, certain hardware and software needs to be installed.

3.5.1 HARDWARE REQUIREMENTS

This comprises of all the physical components of the computer system and its accessories. Therefore the choice of the computer requirement is done to suit both the current and the future needs of the organization with respect to the volume and types of data to be processed. In summary, a computer system with the following minimum requirement is required.

A. COMPLETE COMPUTER SYSTEM

Pentium II 333 Celeron Intel
4.1 GB HDD
64MB SDRAM
3X CD-ROM DRIVE + SOUND CARD
+2No OF SPAKERS
14" SVGA MONITOR
1.44MB FDD
MICROSOFT MOUSE
WINDOWS KEYBOARD

B. OTHER COMPONENTS

Un-interruptible Power Supply (UPS)
Automatic Voltage Regulator (Stabilizer)
Epson LQ2170 Printer
HP Laser Jet 1100 AL Printer
1 Packet of 3.5" Diskette.

3.5.2 SOFTWARE REQUIREMENTS

Software requirements are the basic and other relevant application software that is needed to be installed on the computer system in order to make maximum utilization of the

computer system and the developed package "POPULA". It is because of this fact that the following software must be installed on the system. The software includes:

A. OPERATING SYSTEM SOFTWARE

WINDOW '95 OR '98

MS-DOS 6.22 OR HIGHER

B. POPULA PACKAGE

C. OTHER APPLICATION SOFTWARE

- Complete office '97 or 2000
- MS-word
- MS-Excel
- MS-Power Point
- MS-Access
- MS- Publisher
- Word Perfect 6.1 for Windows
- Corel Draw 5.0 and Above
- Dbase iv
- Clipper 5.0
- Visual Basic

However, other application software apart from the ones mentioned above may be installed as maybe required by the staff and department concerned.

3.6.0 COST AND BENEFIT ANALYSIS

3.6.1 COST ANALYSIS

The cost analysis is the analysis of the total cost (expenses) that is needed in order to put the "POPULA" package to be developed into actual implementation. It is quite important to note that cost and benefit analysis at times is difficult to quantify at best, but must be done in order to estimate the financial and operational impact within the department. Below is the breakdown of the cost of implementing the 'POPULA' package.

A. HARDWARE COST

S/NO	DESCRIPTION OF ITEM	UNIT	RATE	AMOUNT
1	System analysis & design for 2 NKS	2 NKS	3,000	6,000
2	Software development for 1 week	1NK	5,000	5,000
3	Equipment purchase (complete computer system	2 SYST.	125,000	250,000
4	Installation of 2 systems	2 SYST.	10,000	20,000
5	Personnel training (5 staff)	2 NKS	5,000	10,000

TOTAL Cost of Item = ***291,000.00***

B. OPERATIONAL COST

S/NO	DESCRIPTION OF ITEM	UNIT	RATE	AMOUNT
1	Application software as may be required	Lot	25,000	25,000
2	Supplies of computer accessories and stationery	Lot	30,000	30,000
3	Equipment maintenance (Interval of 6 months)	Lot	40,000	40,000
4	Miscellaneous	Lot	20,000	20,000

TOTAL COST OF ITEM = ***115,000.00***

GRAND TOTAL = (A+B) = ***406,000.00***

3.5.2 BENEFIT ANALYSIS

Benefits of computerizing the computational system of the population growth rates and sex ratio analysis of the country as proposed in this project are: -

1. Personnel of user department will be trained and become knowledgeable of computer. They will be able to use computer effectively to process population data instead of the manual approach.
2. Information on growth rates and sex ratios generated and supplied by user departments will be used for forecasting and the formulation of government policy on the economy of the country
3. The government statisticians to do international comparison between other countries and Nigeria can use information generated by the system.
4. User department will serve as an information center for such statistical information of the country's population data. Other consumers of such data find it easy to collect and put them to use. The benefits of the proposed system cannot be exhausted. However, the ones discussed above and the advantages highlighted in 3.2.1 has prompted the researcher to hereby submit that the new proposed system is operationally, technically and economically feasible.

CHAPTER FOUR

4.0 PROGRAMMING DEVELOPMENT/IMPLEMENTATION

4.1 PROCESS OF SOFTWARE DEVELOPMENT

the process of software development is a co-operative effort of the users of software and computer professionals. While computer professional are those familiar with technology and how it can be applied to meet a business information processing needs, users of software on this side have an in depth familiarity with their respective functional areas.

The skills and knowledge of these two groups complement each other and can be combined to create any type of information system during the software development process.

However, because system or software development is a team effort, most organizations have adopted a standardized "system/software development methodology" that provides a frame work for cooperation and successful development of a new system. This step-by-step system development procedures are highlighted below: -

Steps

1. Analysis and specification, appraisal of existing situation and the identification of user requirements is carried out.
2. Design: Design of overall program structure. Design of the detailed process or processing logic is done using pseudo code or flowchart techniques.
3. Programming: Writing of code in appropriate process or language and the entry of written code into the computer. The measurable output is the computer print out of codes.
4. Testing and Debugging: Removal of syntax and logic errors and the final testing of program. This lead to error free program execution.
5. Installation and Maintenance: Error free program installation and user training and maintenance program.

However, software development procedures or process is essentially the same, be it for inventory management, currency processing, airline reservation system, statistical computation e.t.c. As a member of a "Project Team" program through the procedures

outlined in a software development methodology, the result of one step provide the input for the next and or subsequent steps. The project team typically is made up of both users and computer professional (i.e. System Analyst, Programmer and Data Processing Manager). The methodology approach to software development is a tool information services and user managers employ to coordinate the effort of a variety of people engaged in a complex process. Hence for a successful program development of "POPULA" package; It is assumed that the researcher of this work is part of the project team as a programmer. The above five (5) steps were followed one after the other to design and develop a customized software package called the "POPULA" package.

4.1 CHOICE OF PROGRAMMING LANGUAGE

From the previous analysis and feasibility studies carried out, it is pertinent to say that the proposed system is going to be used to compute and analyze large volume of data of the population of the country from the pre-colonial era to the present day. Due to this fact, the choice of programming language chosen for the development of the 'POPULA' package is the Database Management System (DBMS) with special preference for Dbase iv and Clipper 5.0. In this project work we have employ the program to do computation of rates of population growth, sex ratios and estimate of populations. The output is stored in the report files created.

4.1.1 FEATURES OF THE PROGRAMMING LANGUAGE CHOSEN

The reasons for the choice of Dbase iv and Clipper 5.0 is because of the features possessed by both applied software: -

- It is easy to write an active user interface program and also simple to understand.
- It is user friendly.
- It reduces data redundancy.
- Data integrity can be maintained
- Provide easy and greater access to information.

- Individual database file can be designed to meet specific unit of an organization.
- The Clipper 5.0 allows the source program to be compiled to an executable file thereby allowing the program to be run independently of the application software that is used for coding the program (i.e. Dbase iv and Clipper 5.0)

4.2 PROGRAMMING CODES:

The general system designs include the flowchart, a written explanation (pseudocode or algorithm) and finally the programming codes.

For the purpose of this project, programming code has been developed and used to depict the representation of the software. This is available in the project appendix.

4.3 SYSTEM IMPLEMENTATION

System implementation is a broad term that encompasses testing and debugging, hardware and software requirement, System installation and system conversion. It is also the co-ordination of the fact which are necessary in ensuring the operation of the new system.

4.3.1 SYSTEM TESTING AND DEBUGGING

The essence of program testing is to make sure that program is error free and that all the logic involved are well defined and straight forward. However, it is often seen as means of establishing that a program is error free and that it does what is required. This is very dangerous point of view. It is virtually impossible to test a program so thoroughly that can be claimed to be free of error. In most cases, fixing one error gives rise to host of others which in turn have to be corrected exhaustively. It is much more realistic to think of testing as a "processing of finding error". When a stage is reached and the program appears to run perfectly, this does not mean that there are no more errors in the program, it simply mean that those errors have not been discovered.

Hence, the "POPULA" package have been developed, tested with published data obtained from Federal Office of Statistics (F.O.S) and was found to be error free.

4.4 SYSTEM INSTALLATION

This is the process of transferring the developed package from floppy disk (system Disk) to a permanent storage device in the computer system called the hard disk. All the users need to do is to follow the following procedures,

Steps

I. Switch on the computer system and allow to boot.

II. At the Dos-prompt; (Default; C:\>), insert the source diskette (System. Disk) containing the "POPULA" package in.

III. At the Dos-prompt *type* md Proj and press enter key. (this is to create a directory called "proj" in the drive C:) i.e. C:\>MD PROJ ↵

IV. *Type* cd\ Proj and Press enter key. (This is to change directory to directory called proj)

V. At the prompt; C:\Proj>, *type* copy a: *.* and press enter key. (this is to copy all files of the package "POPULA" into the "proj" directory in drive C). the computer will respond by displaying all the files and the available spaces in the diskette on the screen. At the end, the computer will return back to Dos-prompt. The floppy disk becomes a backup. It is well safeguarded against any damages for future use.

4.5 STARTING THE SYSTEM

After the successful installation of the "POPULA" package, starting the new system is very easy. The user needs to follow the following procedures;

1. At Dos-prompt (C:\>), *type* cd\proj and press enter key. (message on the screen: C\proj>)
2. *Type* POPULA and press enter key the computer gives you the main menu with following six (6) options to calculate
   - POPULATION GROWTH RATE
   - SEX POPULATION GROWTH RATE
   - ESTIMATED POPULATION TOTAL
   - SEX RATIO
   - REPORTS
   - EXIT MAIN MENU

4.6 MENU STRUCTURE

The main menu structure of Popula package is in form of rectangular square containing pull-down menu options. The user of the system is expected to use the up and down arrow key to highlight options to be preceded by an enter key to carry out the execution. *Below is the structure of the main menu.*

POPULATION

Cal. Population growth rate
Cal. Sex population growth rate
Cal. Estimated population
Cal. sex ratio for male &female
Reports Section
Exit main menu

Population growth rate
Sex population growth rate
Estimated population
Sex ratio for male &female
Reports Section
Exit main menu

GROWTH RATE

4.7 SYSTEM TEST RUN

The system has been tested and run with the data collected from the Federal Office of Statistics.

Data collected is a secondary data and has been published in this project on the appendix.

The data covers Nigerian Population data for the period of six (6) years from 1991 to 1996. In our computation, we have entered 1991 as base year.

The hard copies of the reports of the computation as generated by the package are shown in the appendix:

CHAPTER FIVE

5.0 SUMMARY, MAJOR FINDINGS AND RECOMMENDATIONS

In this study have earlier aimed at achieving major objectives such as computerizing the computation of the population growth rate in Nigeria. Also to identify the various use which population data are put and therefore develop and understanding of the importance of a sense of responsibility towards population census enumeration and registration of vital statistics and to recognize the various ways in which population growth, the constraints on resources development and pattern of consumption at the family level e.t.c have contributed to the present state of economy and quality of life situation in Nigeria. We have briefly discussed the history of Nigerian Population and her growth pre and post colonial era. Census as the only source of population data in Nigeria was discussed in detail. The rapid nature of the growth of Nigerian Population and the controversies in the opinions of many Nigerians about the population growth rate has encouraged this study and hence the development of a "POPULA" package to handle the computation of population growth rate in Nigeria.

The system has been test run with population data obtained from Federal Office of Statistics (F.O.S) Abuja. Interesting finding has been revealed. The objectives, cost and benefit analysis of the new system have also been discussed explicitly in this work.

5.1 INTERPRETATION OF STATISTICAL ANALYSIS

The reports are the output generated as the result of the population data analysed by the use of the package. The base year is 1991.

REPORTS

i. Shows the analysis of the computation of population growth rate from 1991 to 1996 with 1991 as the base year. The figure shows an upward growth of the population of the country with the growth rate of 2..83%

ii. Shows the computation of sex population growth rate. The data for male and female population covers the period of six (6) years from 1991 to 1996. The analysis shows an upward growth of the population of both

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ii. Shows the computation of sex population growth rate. The data for male and female population covers the period of six (6) years from 1991 to 1996. The analysis shows an upward growth of the population of both

sexes with that of the male being on the higher side through the years considered.

iii. Shows the Nigerian population trend from 1997 to year 2003. By this results, it is expected that the total population of Nigeria from the oncoming census in the year 2001 should be about 117,638,749 million. And in the year 2003 there should be about 124, 391,318 Nigerians in the country.

iv. Shows the computation of Sex ratios. The analysis shows that the general sex ratio for the country is slightly on the high side with about 100.15%. This indicates that there are slightly more male than the female in the population. The sex ratio is also expected to be on the high side from the trend of the sex population totals estimated in this millennium.

5.2 RECOMMENDATION

There is fear that Nigeria will have a population explosion if steps are not taken to control the birth of children. That was the alarm raised by some Nigerians and has prompted the National policy on population announced by the then Armed Forces Ruling Council (AFRC) of Gen. Ibrahim Badamasi Babangida (IBB). This fear is not well founded. Even if, as it is projected, Nigeria reaches a population of over 117 million by the year 2001 when the next census shall take place, that will not be an explosion, neither would it be an unmanageable population size. The truth is that we have the resources to sustain a population of over 117 million. But we have neglected our basic means of sustenance as a nation in preference for lazy over-dependence on crude oil. The Federal government admitted that "growth in the Agricultural sector has been slow, averaging one percent per year since 1970.

This has resulted in deficits in domestic food supply and persistently high and increasing food import bill. What this country need is the development of our Agricultural resource on an intensive scale so as to be able to cater for domestic food supply at low prices and increase our non-oil exports. There are all over the country

5.3 CONCLUSION

A user friendly and Y2K compliant software package **"POPULA"** developed in this study will enable the computation of population statistics like the growth rate, estimated population and sex ratio. This information is vital and can aid Government in the formulation of economic policy and planning. Such policy might be tailored towards achieving an end i.e. full employment, power, long life and good health, knowledge and culture, aggregate welfare or aggregate income of the population as a whole.

The result of the analysis shows that population of Nigeria is growing at a faster rate. From this study, we submit that even if the Nigeria population reaches 200 million or more there is no cause for panic or alarm. Under a dedicated, informed and purposeful leadership and an efficient and industrious management, Nigeria's population will not only maintain itself; it will stretch out to help others to maintain themselves. And finally if a tiny population like that of Israel can make forest and citrus out of desert, why can't Nigeria do even better? If the desert can support and sustain such a nation why can't Nigeria sahelian, savannah and forestlands not do so? Population by itself is the greatest asset of any nation and it is capable of any achievement. Hence the rapid growth of Nigeria population is not the problem. That is our finding.

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APPENDIX

COMPUTATION OF POPULATION GROWTH RATE

Year	Current Year	Population Total		Growth Rate	
		Base	Current		% growth
	1992	88992220	91510700	0.028	2.8000
	1993	88992220	94100453	0.028	2.8000
	1994	88992220	96763498	0.028	2.8000
	1995	88992220	99501902	0.028	2.8000
	1996	88992220	102317806	0.028	2.8000

RPT II

COMPUTATION OF SEX POPULATION GROWTH RATE

Base Yr	Curr Yr	Population Total				Growth Rate		% growth R.	
		Base		Current					
		(M)	(F)	(M)	(F)	(M)	(F)	(M)	(F)
1991	1992	45789796	45720904	44529608	44462612	0.0283	0.0283	2.83	2.83
1991	1993	47085647	47014805	44529608	44462612	0.0283	0.0283	2.83	2.83
1991	1994	48418171	48345324	44529608	44462612	0.0283	0.0283	2.83	2.83
1991	1995	49788405	49713497	44529608	44462612	0.0283	0.0283	2.83	2.83
1991	1996	51197417	51120389	44529608	44462612	0.0283	0.0283	2.83	2.83

COMPUTATION OF ESTIMATED POPULATION GROWTH RATE

Year	Base Yr Pop.	Growth Rate	Estimated Yr	Estimated Pop.
	88992220	.0283	1997	105213400.11
	88992220	.0283	1998	108190939.34
	88992220	.0283	1999	111252742.92
	88992220	.0283	2000	114401195.54
	88992220	.0283	2001	117638749.38
	88992220	.0283	2002	120967925.99
	88992220	.0283	2003	124391318.29

IV

COMPUTATION OF SEX RATIO

Total Male	Total Female	Sex Ratio	Remarks
44529608	44462612	100.1507	Sex Ratio is Hi
45789796	45720904	100.1507	Sex Ratio is Hi
47085647	47014805	100.1507	Sex Ratio is Hi
48418171	48345324	100.1507	Sex Ratio is Hi
49788405	49713497	100.1507	Sex Ratio is Hi
51197417	51120389	100.1507	Sex Ratio is Hi

MATE POPULATION [illegible]

[For M... Popula...

COMPUTATION OF ESTIMATED POPULATION GROWTH RATE

Year Base Yr Pop.	Growth Rate	Estimated Yr	Estimated Pop.
44529608	.0283	2000	57243660.09
44529608	.0283	2001	58863655.67
44529608	.0283	2002	60529497.13
44529608	.0283	2003	62242481.89

FEMALE POPULATION

COMPUTATION OF ESTIMATED POPULATION GROWTH RATE

Year	Base Yr Pop.	Growth Rate	Estimated Yr	Estimated Pop.
	44462612	.0283	2000	57157535.45
	44462612	.0283	2001	58775093.71
	44462612	.0283	2002	60438428.86
	44462612	.0283	2003	62148836.40

```
*****This program calculates Population Growth Rate ******
**********************************************************
set talk off
set status off
set score off
set color to 'w/b'
close all
set device to screen
use P_growth
dele all
pack
clear
i =0
do while i<=24
  @i,0 say replicate(chr(178),80)
  i =i+1
enddo
save screen to yy
store "Y" to ans
Do while uppe(ans) ="Y"
  rest screen from yy
  @5,13 clear to 22,67
  @5,23 say "Compute Population Growth Rate"
  @6,13 to 14,65
  store 0 to p1,po
  store space(4) to Cyear,Byear
  @7,14 say "Enter the Current Year             " get Cyear pict
"9999"
  @9,14 say "Enter the Current Year Pop. Total  " get p1 pict
"999,999,999"
  @11,14 say "Enter the Base Year                " get Byear pict
"9999"
  @13,14 say "Enter the Base Year  Pop. Total    " get po pict
"999,999,999"
  read
  if lastkey() =27
    clear
    return
  endif
  if len(cyear) <4 .or. len(byear) <4
    clear
    @10,20 say "The year must not be less than four digits"
    wait +space(20)+"Press any key to continue..."
    loop
  endif
  if val(cyear) < val(byear)
```

```
    clear
    @10,20 say "The Current Year Must not be less than the Base
Year"
    wait +space(20)+"Press any key to continue..."
    loop
  Endif
  mtime =val(cyear)-val(byear)
  mGrowth =((p1/po)**(1/mtime))-1
  @16,14 say "Population Growth Rate Between "+Byear+" and
"+cyear+" = "+ltrim(str(mGrowth,11,5))
  @18,14 say "The Time Interval =   "+str(mtime,2)
  @20,14 say "The Percentage Growth Rate =
"+str((mgrowth*100),7,2)
  append blank
  repl YearC with Cyear
  repl CyearTot with str(p1,9)
  repl YearB with Byear
  repl ByearTot with str(po,9)
  repl time with str(mtime,3)
  repl GrowthR with str(mgrowth,11,5)
  @22,14 say "Do you still want to Compute another Growth rate"
get ans pict "!" valid ans $ "YN"
  read
  clear
Enddo
rest screen from mm
```

```
**********************************************
*This is the report section for P_growth rate
**********************************************
set device to screen
clear
tt ="p_grt.rpt"
set printer to &tt
set device to printer
use p_growth
m =5
@1,(80-37)/2 say "COMPUTATION OF POPULATION GROWTH RATE"
@2,2 say "Base Year"
@2,13 say "Current Year"
@2,27 say "   Population Total"
@2,55 say "Growth Rate"
@3,27 say "Base"
@3,42 say "Current"
@3,70 say "% growth"
@4,2 say replicate("-",78)
Do while .not. eof()
  @m,2 say alltrim(yearB)
  @m,13 say alltrim(yearC)
  @m,27 say alltrim(byeartot)
  @m,42 say alltrim(cyeartot)
  @m,55 say growthr
  @m,70 say alltrim(str(val(growthr)*100,8,4))
  skip
  m=m+1
enddo
!edit P_grt.rpt
rest screen from mmm
*wait " "

*****This program calculates Estimate of Population Total*
```

```
*************************************************************
set talk off
set status off
set score off
set color to 'w/b'
close all
set device to screen
use est_grth
dele all
pack
clear
i =0
do while i<=24
  @i,0 say replicate(chr(178),80)
  i =i+1
enddo
save screen to yy
store "Y" to ans
Do while uppe(ans) ="Y"
  rest screen from yy
  @5,13 clear to 22,67
  @5,23 say "Compute Estimate of Population Total"
  @6,13 to 14,65
  store 0 to p1,po
  store space(8) to mrate
  store space(4) to Cyear,Byear
  store space(14) to estpop
  @7,14 say "Enter the Estimated Year             " get Cyear pict
"9999"
  @9,14 say "Enter the Base Year                 " get Byear pict
"9999"
  @11,14 say "Enter the Base Year  Pop. Total    " get po pict
"999,999,999"
  @13,14 say "Enter the Population Growth Rate   " get mrate
  read
  if lastkey() =27
    clear
    return
  endif
  if len(cyear) <4 .or. len(byear) <4
    clear
    @10,20 say "The year must not be less than four digits"
    wait +space(20)+"Press any key to continue..."
    loop
  endif
  if val(cyear) < val(byear)
    clear
```

Table: 13

PROJECTED POPULATION OF NIGERIA BY STATES

States	Base Year 1991 Population	PROJECTIONS (ESTIMATES)				
		1992	1993	1994	1995	1996
Abia	2,338,487	2,405,666	2,472,718	2,426,696	2,614,655	2,6[illegible]
Adamawa	2,102,053	2,161,541	2,[illegible]	2,285,619	2,350,[illegible]	2,41[illegible]
Akwa Ibom	2,409,613	2,477,[illegible]	2,547,[illegible]	2,[illegible]	2,694,[illegible]	2,77[illegible]
Anambra	2,796,475	2,875,615	2,9[illegible]	3,[illegible]	3,126,[illegible]	3,215,216
Bauchi	4,351,007	4,474,141	4,600,[illegible]	4,[illegible]	4,864,[illegible]	5,002,521
Benue	2,753,077	2,830,939	2,911,[illegible]	2,[illegible]	3,078,[illegible]	3,165,319
Borno	2,536,003	2,607,772	2,681,[illegible]	2,757,469	2,835,[illegible]	2,915,741
Cross River	1,911,297	1,965,387	2,021,[illegible]	2,078,292	2,137,[illegible]	2,197,[illegible]
Delta	2,590,491	2,663,802	2,739,[illegible]	2,[illegible]	2,896,[illegible]	2,978,[illegible]
Edo	2,172,005	2,233,473	2,296,[illegible]	2,361,[illegible]	2,428,[illegible]	2,497,238
Enugu	3,154,380	3,243,649	3,3[illegible]	3,[illegible]	3,[illegible]	3,616,713
Imo	2,485,635	2,555,978	2,628,[illegible]	2,702,[illegible]	2,779,[illegible]	2,857,831
Jigawa	2,875,525	2,956,902	3,040,[illegible]	3,[illegible]	3,215,115	3,306,103
Kaduna	3,935,618	4,046,996	4,161,526	4,279,[illegible]	4,400,401	4,524,[illegible]
Kano	5,810,476	[illegible]	6,143,[illegible]	6,[illegible]	[illegible]	[illegible]
Katsina	3,753,133	3,8[illegible]	[illegible]	4,[illegible]	4,[illegible]	4,[illegible]
Kebbi	2,068,490	2,127,023	2,187,223	2,249,[illegible]	2,312,772	2,3[illegible]
Kogi	2,147,756	2,208,538	2,271,[illegible]	2,[illegible]	2,401,[illegible]	2,[illegible]
Kwara	1,548,412	1,592,232	1,637,[illegible]	1,[illegible]	1,731,[illegible]	1,[illegible]
Lagos	5,725,116	5,887,137	6,053,[illegible]	6,[illegible]	6,[illegible]	6,[illegible]
Niger	2,421,581	2,490,112	2,[illegible]	2,[illegible]	2,[illegible]	2,[illegible]
Ogun	2,333,726	2,399,771	2,467,[illegible]	2,[illegible]	2,[illegible]	2,[illegible]
Ondo	3,785,338	3,[illegible]	4,[illegible]	4,115,894	4,232,[illegible]	4,352,159
Osun	2,158,143	2,219,218	2,282,[illegible]	2,346,[illegible]	2,413,[illegible]	2,481,[illegible]
Oyo	3,452,720	3,550,432	3,650,[illegible]	3,[illegible]	3,860,[illegible]	3,969,[illegible]
Plateau	3,312,412	3,406,153	3,502,[illegible]	3,[illegible]	3,703,[illegible]	3,8[illegible]
Rivers	4,399,557	4,[illegible]	4,556,[illegible]	4,[illegible]	4,[illegible]	4,[illegible]
Sokoto	4,470,176	4,596,632	4,726,[illegible]	4,[illegible]	4,[illegible]	[illegible],139,535
Taraba	1,512,163	1,554,957	1,598,963	1,644,[illegible]	1,[illegible]	1,732,[illegible]
Yobe	1,399,687	1,439,298	1,480,[illegible]	[illegible],521,915	1,564,[illegible]	1,[illegible]
Abuja	371,674	382,192	393,[illegible]	404,[illegible]	415,567	427,[illegible]
Total	88,992,220	91,510,[illegible]	94,100,453	96,[illegible]	99,[illegible]	102,[illegible]

Source: Federal Office of Statistics/National Population Commission.

Estimates based as growth rate of 2.83% p.a.

Table: 20 (cont'd)

1991 POPULATION OF STATES BY LOCAL GOVERNMENT AREAS

Local Govt. Area	Male	Female	Total
Abuja F.C.T.			
Abaji	10,833	10,248	21,081
Abuja Municipal	129,388	97,561	226,949
Gwagwalada	42,656	36,650	79,306
Kuje	22,422	21,916	44,338
Total	205,299	166,375	371,674

Table: 21

Sex split (across LGAs)

POPULATION TREND ✓

	Male	Female	Both Sexes
1991 (Census)	44,[illegible]9,608	44,462,6[illegible]2	88,992,230
1992 ✓	4[illegible]7,[illegible]4,7[illegible]67	45,720,9[illegible]47	91,510,700
1993 ✓	47,[illegible]89,647	47,014,[illegible]35	94,100,453
1994 ✓	48,[illegible]18,171	48,345,324	96,763,495
1995 ✓	49,788,405	49,713,497	99,501,902
1996 ✓	51,197,417	51,120,389	102,317,806

National Population Commission/Federal Office of Statistics.

Estimates based on growth rate of 2.83% per annum