CIVIL REGISTRATION SYSTEM AND CENSUS EXERCISE IN NIGERIA: THE CHALLENGES OF DEMOGRAPHIC ESTIMATION

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Abstract:

Civil registration is the preferred method for collecting basic data on births and deaths. Most of the civil registration systems in Nigeria and other parts of Africa are far from yielding the accurate and complete data needed for the direct estimation of basic demographic and socio-economic measures.

Unfortunately, because of deficient and unreliable vital registration data, the direct measurement of mortality in these respects is not possible in the Nigerian context. Although the Vital Registration programme received a boost with the conduct of sensitization workshops in the six geo-political zones of the country in 2005, not much has been achieved concerning vital registration in Nigeria.

The National Population Commission (NPC) has the statutory responsibility for the production of demographic and vital statistics in Nigeria and is the main source of data. However, Nigeria is yet to implement the compulsory registration of births and deaths as decreed in 1979. The masses are still yet to be fully sensitised in connection with the issue of registration of vital events in Nigeria. Consequently, this system of demographic information is still not universal and adequate in the country.

While the lack of reliable vital statistics, particularly birth and death statistics from civil registration system, has been apparent for the last several decades, the demand for accurate data on fertility and mortality has grown immensely over the same period in Nigeria and other developing countries. To fill these gaps, population censuses and nationally representative household sample surveys have been widely used as two other principal methods of data collection

Unfortunately, head counts have remained intractable in Nigeria, often bugged down by politics, lack of proper and effective planning, under funding by the government, low level of public awareness, public scepticism, non availability of enough census materials, topographical maps and others. Without doubt, therefore, population census has remained the most sensitive and most controversial in the politics and administration on Nigeria.

A disadvantage in using the other sources for demographic analysis is that the coverage and accuracy vary greatly over time and space. The best solution in remedying the demographic data situation in Nigeria lies in the strengthening and rapid improvement of the sources of basic vital statistics through the registration of births and deaths.

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Introduction

A civil registration system is a system that is concerned with the continuous, permanent, and compulsory recording of the occurrence and characteristics of vital events such as births, marriage, divorce, migration, and deaths (Mba 2002).

By definition, vital statistics, which are derived from civil registration records, are compiled from local registers and their coverage should be nationwide and comprehensive if both the registration and statistics systems are adequate and well maintained. Unfortunately, most of the civil registration systems in Nigeria and other parts of Africa are far from yielding the accurate and complete data needed for the direct estimation of basic demographic and socio-economic measures.

While the lack of reliable vital statistics, particularly birth and death statistics from civil registration system, has been apparent for the last several decades, the demand for accurate data on fertility and mortality has grown immensely over the same period in Nigeria and other developing countries. To fill these gaps, population censuses and nationally representative household sample surveys have been widely used as two other principal methods of data collection[1]. These two data sources have contributed significantly to providing

[1] A population census aims at universal coverage and collects information on economic and social characteristics of every person and household in the nation at a particular point in time. Population censuses are typically taken once every 10 years. Household surveys collect information for relatively small but

data required for the estimation of the vital rates (crude birth and death rates, general, age-specific and total fertility rates, gross and net reproduction rates, life expectancy, etc). These approaches have brought to light the much-needed information on levels, patterns, and trends in fertility, nuptiality, and mortality.

As sources of fertility and mortality data, population censuses, civil registration and surveys are complementary. However, civil registration is the preferred method for collecting basic data on births and deaths and data on cause of death once complete registration has been achieved. It should be noted that fertility and mortality data typically derive from more than one data source. When numbers of births and deaths are derived from civil registration, for example, corresponding numbers of persons required for the calculation of rates and summary measures are usually estimated from population census data. When population censuses are used to collect data on numbers of births and deaths, they are often supplemented by surveys of various kinds, which may provide more detailed and timely data.

Current Status of Civil Registration

The right to a name and nationality is well established. However, in 2000 alone, some 50 million births went unregistered, comprising over 40 per cent of all estimated births worldwide that year, while in sub-Saharan Africa, 70 per cent of all births went unregistered (UNICEF 2006). These unregistered children are

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scientifically designed samples of households. The relatively small sample size makes surveys less expensive and more flexible than population censuses and civil registration, but also less able to provide detailed information on small geographic areas and population subgroups.

almost always from poor, marginalized or displaced families or from countries where systems of registration are not in place or functional.

The National Population Commission (NPC) has the statutory responsibility for the production of demographic and vital statistics in Nigeria and is the main source of data[2]. However, Nigeria is yet to implement the compulsory registration of births and deaths as decreed in 1979. Vital Registration Department of the NPC consists of three divisions, to wit Vital Registration, Vital Statistics, and Migration Divisions. The functions of the Vital Registration Division include, *inter alia, t*he registration of vital events viz. births, deaths, stillbirths, marriages and divorces etc. on a continuous and time basis throughout the country, as well as the design, production and issuance of birth and death certificates. On the other hand, the functions of the Vital Statistics Division include, but not limited to, quality control of the data generated from the vital registration, the production of tables and the analysis of data generated from the vital registration, and preparation of the materials for the quarterly publication of the vital registration statistics (National Population Commission 2005).

Unfortunately, not much has been achieved concerning vital registration in Nigeria. It is, however, noteworthy that the Vital Registration programme received a boost in 2005 with the conduct of sensitization workshops in the six geo-political zones of the country[3]. The objectives of the workshops were to raise public awareness of, and generate support for the continuous and universal

[2] The Federal Office of Statistics (FOS) and the Immigration Department of the Federal Ministry of Internal Affairs are also sources of demographic statistics. The Immigration Department and the FOS are responsible for compiling information on immigration to and emigration from Nigeria.
[3] These are the South South, South East, South West, North East, North West, and North Central Zones.

registration of births and deaths nationwide (National Population Commission, 2005). Participants for the workshops were drawn from the constituent states of the zones, while traditional rulers, religious leaders, representatives of women groups, health officials and the media participated at the workshops along with officials of the NPC.

Despite this achievement, one of the points raised in the communiqué issued at the end of the workshops was that there should be more aggressive awareness campaign down to the village levels using town criers, traditional rulers, school headmasters, teachers, religious organisation, non-governmental organization and the media (National Population Commission, 2005). This clearly suggests that the masses are still yet to be fully sensitised in connection with the issue of registration of vital events in Nigeria. Consequently, this system of demographic information is still not universal and adequate in the country.

The 2006 Population and Housing Census and Expectation

The successful conduct of the March 2006 Population and Housing Census in Nigeria was a clear landmark judging from the fact that national headcounts in Nigeria have not been regular, the last one being held in 1991. For the exercise to be held in spite of numerous complaints and logistical difficulties is worthy of commendation in an ethnically diverse and heterogeneous society as Nigeria.

Clearly, good governance under a democratic dispensation must be data driven. Indeed the relevance of the data to be generated in the 2006 census is

critical to the reform agenda of the present administration in Nigeria. Unfortunately, head counts have remained intractable in Nigeria, often bugged down by politics, lack of proper and effective planning, under funding by the government, low level of public awareness, public scepticism, non availability of enough census materials, topographical maps and others. Without doubt, therefore, population census has remained the most sensitive and most controversial in the politics and administration on Nigeria.

Instead of seeing census exercise as one of the prerequisites for ensuring the growth of the country, it is common knowledge that some people consider population enumeration exercise as an opportunity to undo one another over numerical strength. Consequently, over-representation and/or under-representation of family and household members is likely to be common (Mba 2004; 2003).

Moreover, evidence from the penultimate census and nationally representative sample surveys suggested that the mean household size in Nigeria was around 5 persons per household as shown in Table 1[4]. The results indicate that in Nigeria 8-member households constitute only 5-6% of total households, while 5-member households represent 12-14% of all households. When the three surveys and the 1991 census are compared, the findings presented in the table suggest that the percentage distribution of the number of usual household members is fairly similar. They also compare favourably with United Nations estimates for other African countries(United Nations 2005; 2001).

[4] These statistics generally reflect the picture when each of the six geo-political zones was considered (National Population Commission 1998; 1990-2003 Nigeria Demographic and Health Surveys).

Table 1: Percentage Distribution of Household Composition in Nigeria, 1990-2003

Number of Usual Household Members	1990 NDHS	1999 NDHS	2003 NDHS		1991 Census
1	11.1	11.3	11.9		15.0
2	10.5	11.3	12.0		13.0
3	12.8	13.1	14.1		13.2
4	12.9	14.1	13.2		12.5
5	11.7	13.6	12.1		11.3
6	11.0	10.6	10.8		9.6
7	8.6	8.8	8.4		7.7
8	6.2	5.3	5.1		6.1
9+	15.2	11.9	12.4		11.6
Total	100.0	100.0	100.0		100.0
Mean size	**5.4**	**5.0**	**5.0**		**4.9**

Sources: 1990-2003 Nigeria Demographic and Health Surveys (NDHS) and 1991 Census results.

On the other hand, electronic and print media reports, as well as informal conversations from parts of the country suggest a different picture about the same country (see, for example The Guardian 2006). This may be indicative of massive deficiencies either in the previous census and nationally representative sample surveys or in the latest headcount of 2006. But because the previous census results generally paralleled the three nationally representative sample surveys, it is more plausible to accept the results depicted in Table 1 than anything else as reflective of Nigeria's demographic experience. In this respect, one should expect size of household members approximately similar to what previous studies had shown especially since there had not been any wars or significant historical upheavals that could warrant major shifts in the status quo.

Consequently, if the final results indicate massive discrepancies, it will be highly desirable to adjust the results of the 2006 population and housing census of Nigeria to reflect the 'true' demographic profile of the nation in those areas with fundamental differences from previous empirical evidence.

Standardization or adjustment serves the purpose of eliminating extraneous sources of variation in the data (such as differences in age composition) that may seriously affect the analysis of the subject under investigation. In Nigeria's specific context, the need for adjustment of the census figures will be clear as soon as the official results are published.

Several statistical devices are available for use in standardizing or adjusting sets of data that depending on the characteristics of the populations to be compared[5]. For example, the direct and indirect methods are two principal procedures that can be applied to adjust indices on the basis of age-sex, marital status, mean household size, etc.

Because the 1991 Census results had been evaluated (National Population Commission 1998), it is thus recommended in the event of questionable census results as is being speculated in some quarters (The Punch 2006; ThisDay 2006) to choose the structure of size or number of usual household members as at 1991 for all those LGAs, states, zones, and even for the total country whose statistics are questionable to represent that of 2006. This

[5] In particular, adjusting for the age-sex distribution is usually done after evaluation or quantitative assessment of the data (see, for example Mba 2004; Mba 2003) and requires use of techniques such as Carrier-Farrag Ratio method, Newton's Halving formula, Karup-King osculatory interpolation multipliers, and the Brass Logit transformation technique (Siegel and Swanson 2004; Mba 2004; Arriaga et al. 1994; United Nations 1983; 1952; Ewbank 1981). Software, such as the Spectrum and Demproj can be used for age-sex data adjustment.

assumption is predicated on the fact that during the period 1991-2006 there had not been major catastrophes in Nigeria such as natural disasters, epidemic, civil conflicts that would have resulted in heavy death toll, refugeeism and internal displacement of persons, which would have altered the age-sex composition of households in the country. The choice is also plausible because censuses by definition do not suffer from sampling errors. The second scenario is to choose the structure of the 2003 NDHS for the affected areas on the grounds that the data are the most current nationally representative statistical information available for the country. The third scenario will be to work out a compromise structure on the basis of the information presented in Table 1. In doing this, care should be taken to determine which combination of previous sets of data could be assumed to represent the structure of the affected area(s).

Whichever scenario is accepted, what will be done will be to simply apply the structure of that 'standard' to the absolute number of 2006 for the affected areas. That is, the proportion of the standard population in each household size number multiplies each distribution of household size.

Lastly, the absolute numbers, if questionable can be estimated using previous census results and then applying any of (i) exponential growth method; (ii) geometric growth method; or (iii) Warring-Lagrange extrapolation method (Siegel and Swanson 2004).

Techniques of Demographic Estimation

Rates of birth and death are relative numbers constructed by dividing a number of births or deaths by a corresponding number representing persons at risk of experiencing those events.

Traditionally and most efficiently, mortality is measured by relating deaths in periods of time among particular categories of persons (usually distinguished by sex, age, place of residence, education, occupation, and other characteristics) to the total numbers at risk in these groups. The resulting specific death rates can then be manipulated by a range of conventional techniques, for example, the life table, to determine their levels, patterns and differentials.

The demographic measurement is however hampered by lack of reliable and accurate data in many places because complete and satisfactory vital registration systems (the source of reliable information on deaths over time) do not exist, or at best, are poorly developed, in many African countries, and therefore accurate data on population at risk are hard to obtain. This situation stimulated research into indirect methods of demographic estimation utilizing the available but defective data. Major contributions in this field have been made by Brass (1964; 1975), Brass and Coale (1968), Sullivan (1972), Trussell (1975), Preston and Palloni (1978), Palloni (1979; 1980; 1981), Coale and Trussell (1978), Feeney (1980), Teklu (1994), Venkatacharya (1989), and others. In the absence of universal and reliable civil registration systems, the indirect methods still continue to be the principal techniques in demographic estimation in African

countries in particular and other developing countries in general (United Nations 1983).

As has been highlighted in the preceding discussion, most African countries do not have vital registration systems, or where they exist they are neither representative nor complete. As a result, mortality levels and trends cannot be estimated using conventional methods (Siegel and Swanson 2004; United Nations, 1983; Shryock and Siegel, 1976). For instance, indices such as crude death rates, standardized crude death rates and life expectancy at birth cannot be computed directly in the absence of data on deaths in a year by age and sex. Consequently, for the most part, demographic estimation has concentrated on data collected in censuses and sample surveys.

The question of number of children ever born provides important data on fertility that are often unavailable from any other source, including a fully developed civil registration system. It is very widely used in censuses and surveys throughout the world[6]. The most detailed questions used to produce fertility data by census and survey methods are those that generate a birth history for each woman, which consists essentially of a list of all the woman's children indicating the date of birth of each child and various other information.

In general though, infant and child mortality, as well as adult mortality can be measured directly or indirectly. For direct measurement of infant and child mortality, the data sources are (i) vital registration: deaths by age (ii) censuses: deaths in the previous year by age, and survival status of those born last year (iii)

[6] When asked together with the question on surviving children it provides important data available on infant and child mortality.

sample surveys: deaths in the previous year by age, survival status of those born last year, and birth history data. Then employing the life table technique, infant mortality ($_1q_0$) and child mortality ($_4q_1$) can be estimated[7]. For direct measurement of adult mortality, the data sources are (i) vital registration: deaths by age (ii) censuses: deaths in the last 12 months by age, and (iii) sample surveys: deaths in the previous year by age. Techniques, such as the life table, Brass, Preston-Coale, etc. are then applied to get the needed mortality estimates[8].

Unfortunately, because of deficient and unreliable vital registration data, the direct measurement of mortality in these respects is not possible in the Nigerian context (see, for example Tettey 2003; Kalu 1997; Emerueh 1991; Ukwuani 1991; Jatau 1990).

Concluding Remarks and Policy Issues

Data on births, deaths and population are collected by several complementary methods. Different combinations of methods are appropriate in different circumstances. Three methods of data collection are commonly used to

[7] In case of the indirect method for the estimation of infant and child mortality, the data sources are (i) censuses: children ever born and children dead by age of mother, and (ii) sample surveys: children ever born and children dead by age of mother, survival status of last but one child, and survival of own children by age of child. Here techniques such as those proposed by Brass, Sullivan, Trussell, Preston-Palloni, Zlotnik & Hill for two-point data, etc. can be applied to get the required measures.

[8] For indirect measurement of adult mortality, the data sources are (i) censuses: one or two age distributions, orphanhood (survival of parents by age), and widowhood (survival of spouses by age), and (ii) sample surveys: one or two age distributions, orphanhood (survival of parents by age), and widowhood (survival of spouses by age). Here techniques such as those attributed to Coale and Demeny, Carrier and Hobcraft, Brass and Hill, and Hill and Trussell, can be applied to get the required mortality estimates.

collect fertility and mortality data, as noted in the preceding discussion are civil registration, population censuses, and household surveys.

With the commencement of regular decennial censuses, and the introduction of ad hoc and systematic sample surveys (such as the *Demographic and Health Survey – DHS* – program), as well as limited vital registration systems, the reliability of data on mortality, fertility, family planning, reproductive health, etc. provided by some countries has improved. Yet great deficiencies still exist for many countries.

A disadvantage in using these sources for demographic analysis is that the coverage and accuracy vary greatly over time and space. More importantly, censuses, which are population counts at specific periods of time intervals of 10 or 5 years, are not very valuable as a source of vital events. In fact, the regularity of acceptable census operation cannot be guaranteed on the basis of previous experience[9]. The best solution in remedying the demographic data situation in Nigeria lies in the strengthening and rapid improvement of the sources of basic vital statistics through the registration of births and deaths. The NPC work in this direction should be supported by all. It is hoped that the fundamental difficulties with regard to finance, legal and administrative problems will be overcome in the process of time.

[9] Sequel to political independence in 1960, the acceptable national census was in 1963, followed by that of 1991, and the latest but yet-to-be-accepted 2006 one.

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