The Theory of Multi-Phasic Demographic Response in the Context of Nigeria’s Fertility Regime: How Far and How Well?

Ayinmoro, Aboluwaji Daniel
Department of Sociology, University of Ibadan, Nigeria

This paper examines the extent to which the theory of multi-phasic demographic response is applied to Nigeria’s fertility regime. The theory proposed that when declining mortality occurs in societies, it leads to sustained natural population increase such that every family will tend to use every demographic means possible to maximize new opportunities with the use of wide range of contraception. The descriptive study used data from NDHS, 2013. The results showed that the use of different contraceptive methods as demographic response is still low in Nigeria. Education and women empowerment are suggested for its full applicability in Nigeria’s fertility regime.

Keywords: Fertility, multiphasic response, stimulus, birth control, maximized opportunities

Introduction
The United Nations, Department of Economic and Social Affairs, and Population Division’s recent population estimate for Nigeria states that the population of Nigeria is over 182 million, which is equivalent to 2.48% of the total world population. As a matter of fact, the Nigeria population among the list of countries by population ranks number seven (7), while its population density remains 205 per Km². The land area is 910,802 Km² with 48.1% of its population being urban, and 51.9% being rural (United Nations, Department of Economic and Social Affairs, Population Division, 2015). This makes Nigeria the most populous country not only in Africa continent but among the black countries of the world. However, by the current growth rate of Nigeria according to the United Nations, Department of Economic and Social Affairs, Population Division’s (2015) population projection, Nigeria population would rise to 262 million in 2030, and over 398 million in 2050 if not checked (United Nations, Department of Economic and Social Affairs, Population Division, 2015). This is an indication that Nigeria’s fertility is still astronomically high when compared to other countries in Africa and most developed countries of the world.

According to Isiugo-Abanihe (2010) who painstakingly observes Nigeria’s fertility trends, he argues that by the standards of many developing countries, Nigeria fertility is still high. The reasons for this is not far-fetched because the crude birth rate (CBR) as at 2013 NDHS report is 39 per 1000 population, while the total fertility rate (TFR) is 5.5; meaning that a Nigerian woman will have 5.5 children by the time such a woman completes her reproductive years, all things being equal, which is still high. In spite of the high fertility rate in Nigeria, fertility is lower in the urban centres (4.7 per 1000) compare to rural areas (6.2 per 1000), as well as in the southern Nigeria when compared to the northern Nigeria (NPC & ICP Macro, 2009; NPC and ICF International, 2014).

And again, the reasons for the disparity in fertility rate based on urban-rural and south-north dichotomy is the variance in the prevalence of contraceptive use (see NPC and ICF International, 2014). Thus, the contraceptive prevalence rate (CPR) still varies and generally speaking low in Nigeria due to the fact that many of the rural women who are married that...
constitutes the larger percentage of the population of reproductive age (15-49) are not using contraceptive (see NPC and ICF International, 2014). Besides these, Nigeria as a heterogeneous state with distinct socio-cultural values relative to contraceptive use, which ought to have stimulated declining fertility serves as an impediment to high contraceptive prevalence rate (Isiugo-Abanihe, 2010). As such, following the low contraceptive prevalence rate (CPR), it is expected that Nigeria will experience high fertility or population growth based on UN Population Department projection for 2030 and 2050 if not check with the use of multidimensional birth control measures.

Nevertheless, this paper attempts to assess the prevalence of birth control measures in Nigeria as applied in Japan which has led to the configuration of the theory of multiphasic response propounded by Davis Kingsley in 1963. While taking Kingsley Davis’ theory into cognizance in this paper, the extent to which it is applied and motivated in the context of Nigeria’s fertility regime using data from NDHS 2013 would be taken into account.

**Kingsley Davis’ Theory of Multi-Phasic Response to Demographic Change**

Within the purview of the theory of multiphasic response after a concomitant study of Japan and some Western European countries relative to birth control and maximization of opportunities, Kingsley Davis (1963: 362) suggested that to understand societies “faced with a persistent high rate of natural increase resulting from past success in controlling mortality, family tended to use every demographic means possible to maximize their new opportunities ...” and that these societies used “virtually the entire range of possible responses” (p. 350). To him, there are stimuli motivating the decisions of families to have used all possible demographic means to maximize their new opportunities. The stimuli are therefore, based on the prevailing social or cultural values (e.g. norms and religion) in such society, or as a result of the prevailing economic situations (e.g. inflation rate or poverty level), as well as the prevailing technological environment (e.g. fertility medicine or modern contraceptives).

According to Davis (1963) the main responses to demographic change in Japan and other industrialized societies are (1) celibacy, (2) postponement or delayed marriage, (3) the use of modern contraceptives, (4) abortion and sterilization, (5) external migration, (6) rural-urban migration or population redistribution (Davis, 1963; Friedlander, 1969). The rationale behind this is that, by their nature, each of the demographic variables may affect population size and distribution. As a result of this, the three demographic components and their change are likely to affect population size interrelatedly (Friedlander, 1969). Indeed, as Friedlander (1969) added following the motivations for maximizing opportunities via fertility reduction; various communities adjusted in different ways in their fertility behaviour depending upon the ease to which they can relieve the strain arising from high fertility. In his precise statement:

“... the adjustment in reproductive behavior made by a community in response to a rising ‘strain’, such as that resulting from higher natural increase, is likely to differ depending upon the ease with which the community can relieve the strain throughout migration” (Friedlander, 1969: 359-360)

This means that the process of demographic change and response is not only a continuous process but also a reflexive and behavioural process. In other words, the process of demographic change in every society is characterised by dynamism, thereby making it inevitable that a change in one component in the society will invariably induce change in other components of the society. At the same time, any change in the society is orchestrated by the process of change involving human decisions in the pursuit of predetermined goals with varying means and conditions (Davis, 1963).

To Coale and Cotts Watkins (1979), demographic changes in any given society are dependent upon economic and socio-cultural change. This implies that the process of demographic change is a continuum and does not happen at once throughout the country, but starts with areas of early acceptance before it
The Theory of Multi-Phasic Demographic Response in the Context of Nigeria’s Fertility Regime: How Far and How Well?

spreads to other parts of the society or country. This also means that population growth is all encompassing in the sense that it is both characterised by “reproductive urge” and “means of subsistence”, while at the opposite extreme, demographic behaviour is a function of a “traditional culture” or “value system” in existence in a given society (Davis, 1963: 345).

As illustrated in figure 1, the conceptual framework gives a clear picture of how natural increase in the population is reduced as a result of success achieved in controlling mortality considering the reflection of the prevailing value system, socio-economic conditions and technological environment as the stimuli predisposing different societies within a nation to go by varied means of birth control measures. This brings about a reduction in fertility as individual or family(ies) tends toward maximizing their opportunities.

Figure 1: Conceptual Framework of the Theory of Multi-Phasic Demographic Response

Source: Author’s Idea

This simply means that there are basic driving forces that stimulate individual family to adopt one form of birth control or the other. Buttressing this however, Isiugo-Abanihe (2010) asserted that the basic stimuli in the process of using any method of birth control is premised on declining mortality and sustained population increase as well as economic conditions. That is to say, “increasing productivity and opportunities coupled with a more or less universal bent toward economic rationality at the individual level” (Isiugo-Abanihe, 2010: 23).

As Isiugo-Abanihe (2010) further explained, given these driving forces, the theory of multiphasic response will take place or at least historically has taken place. In support of the historical perspective of the theory, Campbell (2012) observes that demographic change and response in any given society is even historical, and more often than not, focuses on estimation and interpretation of trends and patterns in demographic rates both in pre-modern and modern societies so as to serve as a means of better understanding of contemporary demographic phenomena. To him, demographic
changes and processes in any nation is a life course which pass across generations. He further maintained that measuring and explaining differentials in demographic outcomes as well as "illuminating relationships" between socio-economic and demographic processes are not only made to exclusively focus on fertility and mortality, but also consider household organization, migration, social mobility, and other socio-economic, and demographic outcomes. This will enable us to fully explain the intertwine nature of demographic outcomes with other areas of disciplines in the most effective manner (Campbell, 2012).

By a way of reference to Japan's study which predicated Kingsley Davis' (1963) theory of multiphasic response, induced abortion was one of the legally acceptable demographic responses to change. And this has made tremendous significant contributions to the rapid rise of registered abortion rate from 11.8 per 1000 women aged 15-49 in 1949 to 50.2 per 1000 in 1955, although at the latter date the registration of abortions was estimated to have been only 50 to 75 per cent complete. However, the resort to abortion has been the leading cause of perhaps the fastest drop in the birth rate ever exhibited by the entire nation because births per 1000 women aged 10-49 fell by 41 per cent between 1950 and 1957. In other words, abortion as a demographic response in Japan in its absolute figure rose from 102 in 1949 to 1,1170 in 1955 before it fell to 1,099 in 1959 (Davis, 1963).

According to Davis (1963), the stimulus for Japan and some of the industrialized countries (such as Hungary and Poland) resorting to induced abortions was a response to socio-economic conditions arising in the country after an experience of the process of industrialization and modernization at that point in time which served as an effective means of family limitation measure, as well as the prevailing technological advancement in the country.

Another measure of birth control adopted as demographic response in Japan was the use of contraceptives which rapidly increased after 1950. According to Taeuber (cited in Davis, 1963), contraceptive prevalence rate prior to 1950 was shown by a 1950 National Survey which found that about a fifth of couples were currently using contraception and that nearly a third had done so at some time. Indeed, according to the survey, the age pattern of change in marital fertility shows that before the great rise in reported abortions began, couples were increasingly controlling their births, especially at the older ages using contraceptives (Davis, 1963). In addition to this, sterilization was also reported as a measure to control birth in Japan. With the records of operations totaling 5,695 in 1949, and with an average of 42,843 per year during 1955-59, sterilization was reported to equal 3.8 percent of reported abortions. It was as a result of this, Davis (1963) stated that, even during that time, there were some indications of "a small amount of infanticide" as a birth control mechanism in Japan (p. 347).

Moreover, since Japan's demographic response to change was made to be all-encompassing; the movement of Japanese from their homeland in sizeable numbers to other territories was also reported. According to Davis (1963), the proportion of Japanese persons aged 15-59 that have moved out of their places of origin was 2.8 per cent in 1920, 3.2 percent in 1930, and 5.6 per cent in 1940. Among the rural populace, and due to the industrial revolution experienced in the European countries, rural-urban migration was found to be a common phenomenon. As the economic revolution advances, the rural dwellers migrate to the cities as more opportunities are offered by continued industrialization. One of the consequences was a drastic reduction in their natural increase so as to maximize the opportunities the industrial sector tended to offer.

To Irene Taeuber (in Davis, 1963), without rural out-migration, the rural population that constituted about 45.9 million in 1920 would have reached 62.6 million in 1940. Instead, the rural population of Japan in 1940 remained 45.5 million, a decrease by 0.4 million from 45.9 million it was in 1920. The significance of rural-urban migration is that it involves a shift of occupation as well as residence. In fact, members of a farm family can leave agriculture, either part-time or full time, without ever leaving home of origin. Another factor that
The Theory of Multi-Phasic Demographic Response in the Context of Nigeria’s Fertility Regime: How Far and How Well?

contributed to the decline in fertility rate in Japan by rural-urban migration. Irene Taeuber reported that village girls in Japan left their respective villages to work in cities as maids, factory workers or sellers, and most often, typically remaining away for six years, in order that they may save enough to get married either upon returning home or while remaining in cities for the purpose of payment of dowry as it remained the basic requirement for girls in Japan to get married (Davis, 1963).

Again, postponement of marriage (delayed marriage) was also adopted as a measure for fertility reduction in Japan due to the fact that the proportion of ever married girls aged 15-19 fell from 17.7 percent in 1920 to 1.8 percent in 1955, and for the women aged 20-24, it fell from 68.6 to 33.9 percentage respectively. This shows that the shift for men was drastic. As Davis (1963) observed, during that time, it may be that the age at marriage rose faster in Japan than in any other countries in history. Because by 1959 Japan had a marital age higher than that of most Western countries (61.8 percent compared to 18.5 percent for USA, 38.4 percent for Sweden, and 42.3 percent for Italy men aged 25-29). Also, in the United States in that year nearly half of the brides in first marriages were under 20, while only a few of them were that young in marriage in Japan at that point in time. Thus, the Japanese concentrated their marriages more heavily in the modal ages 20-24 for brides and 25-29 for grooms when compared to other Western countries. As a consequence of marriage postponement, the age at marriage sporadically rose almost as fast in the rural areas of Japan as it did in the urban (Davis, 1963).

Besides delayed marriage, celibacy was also mentioned as one of the adjustments adopted in most of the industrialized countries but with Japanese having the lowest proportion.

Figure 2: Proportion Never Married Women Aged 40-44 in Selected Countries

As the statistics revealed, the proportion of women between age 40 and 44 who had never married was only 2.4 percent in Japan as at 1955, in the United States in 1950 it was 8.1 percent, in Italy in 1951 it was 15.7 percent (see figure 2). It looks as though the age at marriage is flexible in Japan but not the decision to many as not to marry. However, even this may change. The women who in 1955 were aged 40-44 represent a generation whose marriages, occurring mainly in 1930-40, were still almost wholly arranged by parents. As the age at marriage gets later, and as mating becomes more a matter of individual selection, a rising contingent of women may never succeed in attracting a man they are willing to marry (Davis, 1963). This also has implication on fertility rate of the entire population. This is because the later the marriage, particularly among women, the less the number of children they are likely to born considering their reproductive age (15-49).

Data and Methods
This study adopted a descriptive research design using secondary data to examine fertility trends
and contraceptive uses by methods among women of reproductive age (15-49) from the Nigeria Demographic and Health Surveys (NDHS) conducted between 2008 and 2013. Although the NDHS 2008 was used to examine the fertility trends of Nigeria, but NDHS 2013 provided the most recent TFR and contraceptive uses by methods among women so as to see the extent to which women of reproductive age (15-49) are using contraceptive and other methods of birth control (proximate determinants). Samples from NDHS were drawn from national surveys and analyzed on the basis of the six geo-political zones existing in Nigeria. Descriptive statistics such as frequency and simple percentages were used to present data for the purpose of simplicity of descriptions of the subject matter.

**Variable Definitions**
The data were analyzed based on the total fertility rate (TFR), contraceptive uses by methods (modern and traditional methods), and migration. The TFR means the number of children a woman will have by the time such a woman completes her reproductive years, all things being equal. This is usually measured per 1000 women. Contraceptive use is another variable used in the data analyzed which is based on (1) modern contraceptive methods (female sterilization, pill, intrauterine device [IUD], injectables, implants, male condom, and lactational amenorrhea [LAM]). And again, though not included in the NDHS report, but abortion has been considered as one of the demographic responses to change in this study; while (2) the traditional contraceptive method includes rhythm, withdrawal and other traditional methods. These were basically measured in simple percentages. However, another variable found to be critical and fundamental to demographic change in this study is rural-urban migration. Although migration does not impact directly on fertility rate but the movement of people from rural areas to urban centres play significant role in changing human fertility behaviour. As such, it cannot be ignored. Other demographic variables are age at marriage (deferment of marriage) and postponement of childbearing which are also termed as proximate determinants of fertility.

**Results and Discussion**

**Demographic Response and Fertility Trends in Nigeria**
Nigeria has to a large extent presented the picture of her people responding in almost every demographic manner known to some socio-economic and technological stimuli. According to Isiugo-Abanihe (2010), declining fertility in Nigeria seems to have coincided with economic downturn of the mid-1980s and 1990s as occasioned by the Structural Adjustment Programme (SAP) and the misgovernment of the military government. In view of this, economic hardship has forced many people to terminate or postpone child bearing, while forcing others to defer marriage and the arrival of the first marriage (Isiugo-Abanihe, 2010).

To Makinwa-Adebusoye and Feyisetan (1994), in response to such economic crisis, there was the postponement of the next birth especially by the younger women, as well as a reduction in the percentage of women making the transition from one parity to the next. Thus, making fertility rate falls more rapidly among women below age 20 and women 35 years and above.
Other evidences that showcase fertility decline in Nigeria fertility regime could be deduced from the completed family size (particularly the mean number of children ever born to women age 45-49 who are assumed to have stopped child bearing [Isiugo-Abanihe, 2010: 17]) as well as the ideal family size that declined from 7.03 in 2003; 6.86 in 2008 to 6.76 in 2013 respectively (NPC & ICF Macro, 2009; NPC and ICF International, 2014). As Isiugo-Abanihe further argued, this is a strong indication that Nigerians have started to adjust their family size preferences downward as depicted by figure 3 indicating that TFR has fallen from 7.3 per 1000 women in 1972 to 5.5 per 1000 women in 2013 though at a slow pace considering the number of years it took the country to have had such decrease in total fertility rate. Meaning that, it took Nigeria about 41 years to reduce fertility rate from 7.3 per 1000 women to 5.5 per 1000 women of which only a reduction of 1.8 per 1000 women is recorded.

However, according to NDHS (2008), marriage patterns are significant determinant of fertility levels in a population (NPC & ICF Macro, 2009). As such, there have been slightly decline of the median age at first marriage between 2008 and 2013 in Nigeria among women age 25-49 from 18.3 to 18.1 years (NPC & ICP Macro, 2009; NPC & ICF International, 2014). There is also a variance in the median age at first marriage according to residence.

According to NDHS 2008, on the average, urban women marry at 21.1 years compared to rural women who marry at 16.9 years. Moreover, the median age at first marriage varies substantially by the level of education of both men and women. Thus, the median age of women age 25-49 with no education is 15.5 years compared to 22.0 years for women with more than secondary education. While for men, it is later than women at first union with the median age at first marriage (men age 25-59) of more than 26 years of age (NPC & ICF, 2009).

Still on the age at first marriage as a proximate determinant of fertility, the NDHS 2013 Report showed that marriage is the primary indication of women's exposure to the risk of pregnancy. Therefore, the populations in which women marry at a young age tend to have high fertility and early childbearing. For this basic reason, there is an interest of population scientists in age at marriage (NPC & ICF International, 2014).

Table 1 shows the percent distribution of women and men by marital status. It is revealed that the percentage of women who have never married declines sharply with age from 70 percent among women age 15-19 to 1 percent among women age 45-49. As the table further revealed, though most men eventually marry, but men tend to marry later than women. As such, there was a higher percentage of men age 15-49 (48.3 percent) that were not married.
compared to women age 15-49 (24.9 percent) that were not married at the time of the survey. Indeed, the percentage of women age 15-19 who were married at the time of the survey was 28.2 percent while the corresponding percentage for men was 1.1 percent. This means that the percentage of women and men of reproductive age who had married at the time of the survey was less than those who married at the later reproductive ages. This may also be significant to women fertility.

### Table 1: Percent Distribution of Women and Men age 15-49 by Marital Status and Age

<table>
<thead>
<tr>
<th>Age</th>
<th>Never Married</th>
<th>Married</th>
<th>Living Together</th>
<th>Divorced</th>
<th>Separated</th>
<th>Widowed</th>
<th>Total</th>
<th>Currently in Union (%)</th>
<th>No. of Respondent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WOMEN</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15-19</td>
<td>70.4</td>
<td>28.2</td>
<td>0.6</td>
<td>0.5</td>
<td>0.1</td>
<td>0.1</td>
<td>100.0</td>
<td>28.8</td>
<td>7,820</td>
</tr>
<tr>
<td>20-24</td>
<td>33.1</td>
<td>61.3</td>
<td>3.3</td>
<td>1.3</td>
<td>0.8</td>
<td>0.3</td>
<td>100.0</td>
<td>64.6</td>
<td>6,757</td>
</tr>
<tr>
<td>25-29</td>
<td>14.1</td>
<td>79.8</td>
<td>3.0</td>
<td>1.1</td>
<td>1.1</td>
<td>0.9</td>
<td>100.0</td>
<td>82.8</td>
<td>7,145</td>
</tr>
<tr>
<td>30-34</td>
<td>6.7</td>
<td>86.6</td>
<td>2.5</td>
<td>1.1</td>
<td>1.5</td>
<td>1.6</td>
<td>100.0</td>
<td>89.1</td>
<td>5,467</td>
</tr>
<tr>
<td>35-39</td>
<td>2.7</td>
<td>89.4</td>
<td>1.7</td>
<td>1.3</td>
<td>1.4</td>
<td>3.4</td>
<td>100.0</td>
<td>91.2</td>
<td>4,718</td>
</tr>
<tr>
<td>40-44</td>
<td>1.5</td>
<td>87.8</td>
<td>1.3</td>
<td>1.4</td>
<td>1.4</td>
<td>6.6</td>
<td>100.0</td>
<td>89.1</td>
<td>3,620</td>
</tr>
<tr>
<td>45-49</td>
<td>0.7</td>
<td>83.9</td>
<td>1.0</td>
<td>1.4</td>
<td>1.8</td>
<td>11.1</td>
<td>100.0</td>
<td>85.0</td>
<td>3,422</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>23.9</td>
<td>69.4</td>
<td>2.0</td>
<td>1.1</td>
<td>1.0</td>
<td>2.5</td>
<td>100.0</td>
<td>71.5</td>
<td>38,948</td>
</tr>
</tbody>
</table>

| **MEN** |               |         |                |          |           |         |       |                        |                   |
| 15-19 | 98.7          | 1.1     | 0.0            | 0.1      | 0.0       | 0.1     | 100.0 | 1.1                    | 3,619             |
| 20-24 | 84.8          | 14.0    | 0.5            | 0.4      | 0.3       | 0.0     | 100.0 | 14.4                   | 2,892             |
| 25-29 | 53.3          | 43.7    | 1.2            | 0.8      | 0.7       | 0.2     | 100.0 | 45.0                   | 2,757             |
| 30-34 | 25.6          | 70.6    | 1.9            | 0.7      | 1.0       | 0.3     | 100.0 | 72.5                   | 2,414             |
| 35-39 | 8.8           | 87.3    | 1.8            | 0.8      | 1.0       | 0.4     | 100.0 | 89.0                   | 2,175             |
| 40-44 | 3.1           | 92.8    | 2.3            | 0.8      | 0.7       | 0.4     | 100.0 | 95.0                   | 1,777             |
| 45-49 | 1.0           | 94.0    | 1.7            | 0.7      | 1.4       | 1.3     | 100.0 | 95.7                   | 1,724             |
| **Total** | 48.3          | 49.1    | 1.2            | 0.5      | 0.6       | 0.3     | 100.0 | 50.2                   | 17,359            |

**Data Source:** NPC & ICP International (2014)

Besides the termination or postponement of childbearing and deferment of marriage as demographic responses to population change in Nigeria (Isiugo-Abanihe, 2010), the current social and technological environment has contributed to the rise of different methods of contraceptive use (modern and traditional methods) as demographic responses. This is adduced to the proportion of aggregative currently married women using any method of contraceptives by geo-political zone revealed by NDHS 2013 indicating that South-West has the highest prevalence (38.0%), followed by South-South (29.2%) with the North-East having the lowest rate of currently married women using any method of contraceptives (5.2%) (NPC & ICP International, 2014). Furthermore, table 2 shows that South-West has the highest modern method of contraceptive use (24.9%), followed by South-South (16.4%), North-Central (12.4%), South-East (11.0%), while the North-East and North-West have the lowest proportion of modern contraceptive use with 2.7 percent and 3.6 percent respectively. Similarly, in the aggregative currently married women using any traditional method, it was revealed that South-East has the highest contraceptive prevalence of 18.2 percent, followed by South-West 13.1 percent, South-South 11.7 percent, North-Central 3.2 percent, while the North-East and North-West have the lowest traditional contraceptive prevalence of 0.3 percent and 0.4 percent respectively (See Table 2). This means that on the aggregate, South–North
The Theory of Multi-Phasic Demographic Response in the Context of Nigeria's Fertility Regime: How Far and How Well?

dichotomy of Nigeria with any method of contraceptive prevalence rate varied, but none of the geo-political zone has a record of zero prevalence of contraceptive use.

This implies that although all geo-political zones in Nigeria are responding to demographic change using different methods of contraceptives with varied proportions of responses, but the availability and utilization of family planning services especially the modern method of contraceptives is still felt to be limited or very low particularly in the North-East and North-West Zone Nigeria when compared to other geo-political zones. This however, follows that Friedlander’s (1969: 360) assertion that “population change can be studied on various aggregative levels” in such a way that it can be focused on a village, or a number of villages, or even a district according to how applicable it is in the area of study applies to Nigeria. In other words, the hypothesis concerning the interrelationship between demographic variables put forward by Friedlander is presumed to hold sway on any level of the society, though there could be differentials in its implications depending on the prevailing geo-political cum administrative system as indicated in table 1 for Nigeria women currently using any contraceptive methods by geo-political zones.
Table 2: Percentage Distribution of Currently Married Women age 15-49 by Contraceptive Methods currently Used According to Geo-Political Zone in Nigeria 2013

<table>
<thead>
<tr>
<th>Geo-Political Zone</th>
<th>Modern Method</th>
<th>Traditional Method</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Any Method</td>
<td>Any Traditional Method</td>
</tr>
<tr>
<td></td>
<td>Any Modern Method</td>
<td>Rhythm</td>
</tr>
<tr>
<td>North-Central</td>
<td>15.6</td>
<td>12.4</td>
</tr>
<tr>
<td>North-East</td>
<td>3.2</td>
<td>2.7</td>
</tr>
<tr>
<td>North-West</td>
<td>4.3</td>
<td>3.6</td>
</tr>
<tr>
<td>South-East</td>
<td>29.3</td>
<td>11.0</td>
</tr>
<tr>
<td>South-South</td>
<td>28.2</td>
<td>16.4</td>
</tr>
<tr>
<td>South-West</td>
<td>38.0</td>
<td>24.9</td>
</tr>
</tbody>
</table>

Data Source: NPC and ICF International (2014). *IUD = Intrauterine Device; 
*LAM = Lactational Amenorrhea Method
In addition to this, and as a birth control measure, induced abortion has been recorded to have impacted significantly on fertility reduction in Nigeria as a response to demographic transition despite its illegality as enshrined in both Muslim states of Northern Nigeria (the Penal Code, Law No. 18 of 1959) and in the Southern part of the country largely dominated by Christian religion (the Criminal Code of 1916 is in effect), as well as its prohibition as birth control measure by the Acts of Nigeria’s parliament (United Nations, 2015). According to Okonofua, Hammed, Abass, Mairiga, Mohammed, Adewale and Garba (2011), there are approximately about 760,000 abortions yearly by Nigerian women amounting to 25 abortions per 1000 women aged 15-49. This means that though abortions is illegal in the context of birth control mechanism in Nigeria but it is adopted as one of the responses to unplanned and unwanted pregnancy especially by the young women.

Moreover, the movement of people from rural areas to urban centres (out-migration) is to a large extent a demographic response to change in Nigeria. According to NISER (1997) out-migration has contributed tremendously to demographic change. Corroborating this view, The World Factbook (2015) estimated that urban population amounts to 47.8% of Nigeria’s total population, while the annual rate of urbanization is put at 4.66% since 2010 to 2015 (The World Factbook, 2015). This suggests that there is an increase in the rate of rural-urban drift in the country, which in turn impact significantly on fertility behaviour as revealed by the study of Majelantle and Navaneetham (2013) “Migration and fertility: A review of theories and evidences”. Put differently, both international migration and internal migration of any form is seen as demographic response to change in demographic history though with limited empirical justification in Nigeria.

**Stimulus for Nigeria’s Multiphasic Response to Demographic Change**

In contrast with Japan and other Western European countries, Nigeria’s responses to modern demographic change is predicated on certain stimuli, namely improved social mobility for women, industrial revolution, technological advancement and economic crisis among others. As Isiugo-Abanihe (2010) and Makinwa-Adebusoye and Feyisetan (1994) seems to unanimously agreed, the economic crisis and hardship had forced many people to adopt one form of birth control or the other ranging from postponement of childbearing to deferment of marriage. This suggests that while the western world patterns of demographic responses were based on personalistic quest for demographic change, Nigeria’s fertility are based on the dictum of economic environment occasioned by economic hardship. This means that when the economic is buoyant both at micro and macro level, fertility is likely to rise. Represented with the following equation in some parts of the country.

\[ \text{Stimuli for fertility} = f(EC + WE + G + IR + TA + \ldots \ldots SC) \]  

(1)

Where \( f \) is a function of, \( EC \) is the economic conditions/crisis, \( WE \) is women empowerment (i.e. the extent to which women are empowered), \( G \) is globalization (meaning the impact of globalization on fertility behavior), \( IR \) is industrial revolution, \( TA \) is the technological advancement (i.e. the level of technological advancement in the country), \( SC \) is the prevailing cultural values on fertility as well as other motivating factors. Meaning that, no matter what the stimuli for fertility may be in the country based on individuals, states, geopolitical zones, these factors will strongly determine the country fertility regime.

As a matter of fact, there are various factors responsible (stimuli) for Nigeria’s demographic change. Among other factors are the effects of globalization on fertility, industrialization, modernization, migration, urbanization as well as the current state of technological awareness in fertility medicine (Isiugo-Abanihe, 2010; Giddens, 2001) that have facilitated the reduction of fertility from 7.3 per 1000 women to 5.5 per 1000 women between 1972 and 2013. And again, the encouragement of female education and the global quest for career excellence for women engendered by MDG 3: “Gender equity and women empowerment” (UNDP, 2013) contribute enormously to the downward slope of Nigeria’s fertility regime. Therefore, as one of the yardsticks to curtail the
prevailing poverty level and maintain certain level of improved standard of living, people find it absolutely profitable to adopt one birth control method or the other to reduce fertility.

Fundamentally, the increasing involvement of women in formal employment as well as the change in the political environment through population policy (1988 and 2004) serves as another motivation for Nigeria’s modern demographic response to change in contrast to Japan where there was no population policy put in place. This implies that while it was more individualistic modern demographic change in Japan and other industrialized countries, it is more of policy, structural and collectivistic related modern demographic change (response) in Nigeria.

Also, the high level of rural-urban drift in Nigeria which is largely predicated on the choice for more opportunities in the cities in terms of education, employment, availability of social amenities, the need for increase in remittances, and the potential benefits of higher wages or income (Harris-Todaro, 1970), are all significant factors for fertility (rate) reduction in Nigeria relative to TFR downward slope. In this way, rural Nigerians actually readjusted to demographic changes brought by economic hardship (Isiugo-Abanihe, 2010) in their respective communities which also has significant impact on their reproductive behaviour. The question here is this: To what extent will the use of different methods of contraceptives reduce fertility in general following the momentum of population increase projections in Nigeria with the United Nations, Department of Economic and Social Affairs, Population Division’s population estimates of about 182 million in 2015; 262 million in 2030, and 398 million in 2050? This will as a matter of fact, take us to the challenges that may impede the use of multi-phasic demographic response in Nigeria fertility regime.

Challenges to Multiphasic Demographic Response in Nigeria’s Fertility Regime

As good as optimum population is, it is obviously difficult for Nigeria to achieve despite the use of different methods of contraceptives to reduce fertility so as to maximize opportunities. This means that with the prevailing population growth of 3.2 percent (NPC and ICF International, 2014), even though there is a substantial concurrent decline in fertility and mortality rates, Nigeria will still be having a youthful age structure projected to increase by 40% by 2025. Without effective population policy to reduce the high fertility rate, Nigeria’s population will be 398 million by 2050 (United Nations, Department of Economic and Social Affairs, Population Division, 2015). This informs us that there are a number of challenges that may hinder the actualization of optimum population in Nigeria without the adoption of multidimensional contraceptive uses.

However, the challenge of low use of contraceptives in Nigeria is largely tied to socio-religious factors as well as the inability of rural communities to embrace the use of modern contraceptives in its absolute as response to demographic change (Isiugo-Abanihe, 2010). As revealed in table 3, less than one-third (26.8%) of the total percentage of respondents used any method of contraceptives compared to 73.2% that were not using any method of contraceptive among urban settlers; and for the rural areas only 8.5% were using any method of contraceptives while a very large proportion of the rural dwellers (91.5%) were not using any method of contraceptives. This shows that the diversity of socio-cultural or socio-religious factors in Nigeria is reflected in the use of modern contraceptives coupled with the high level of illiteracy and wide spread of poverty despite the proportions of married women using contraceptives indicated in table 1.
The Theory of Multi-Phasic Demographic Response in the Context of Nigeria’s Fertility Regime: How Far and How Well?

Table 3: Percentage of Currently Married Women Aged 15-49 Using Modern Contraception by Residence (Urban and Rural)

<table>
<thead>
<tr>
<th>Residence</th>
<th>Any Method</th>
<th>Any Modern Method</th>
<th>Any Traditional Method</th>
<th>Not Currently Using</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban</td>
<td>26.8</td>
<td>16.9</td>
<td>9.9</td>
<td>73.2</td>
<td>100.0</td>
</tr>
<tr>
<td>Rural</td>
<td>8.5</td>
<td>5.7</td>
<td>2.8</td>
<td>91.5</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Data source: NPC and ICF International (2014)

As most scholars will argue, one of the stimuli for the use of different methods of contraceptives in Nigeria (as depicted in table 2), though with some of the methods recording low contraceptive prevalence rate (CPR) particularly between 2004 and 2013; was basically connected to population policy issues. But how effective the population policy has been relative to its uniform application in the country worth to be put into consideration due to the emerging diverse ethnic groups existing in Nigeria. For instance, Nigeria has about 389 ethnic groups, out of which only three - Hausa, Yoruba and Igbo - are reckoned as majority (Obono, 2003). As Obono (2001) in Obono (2003) argues, these minorities are passionately tied to their minority status; meanwhile the number of people in a geographical location is used for revenue allocations and representatives in government. Thus, the minorities may feel threatened.

As a result of this, though population control policy may be a rational choice for Nigeria government, but the Yakurr will consider, as an instance, will perceive anti-natalism as not favourable considering their high rate of sterility and infant mortality (Obono, 2001; cited in Obono, 2003). As Obono (2003) opined, in a plural ethnic society like Nigeria, a uniform policy is unsuited to a culturally heterogeneous country. Instead, the policy ought to be cognizant of variations across local contexts, particularly when what is to be regulated is something so personal and interwoven with the cultural fabric of collective life (Obono, 2003).

Here again, the challenge of early marriage in some parts of Nigeria still pose a threat to the actualisation of fertility reduction such that mothers above 35 years would have stopped given birth to children may hinder their propensity to reduce the number of children born throughout their reproductive age (15-49). Similarly, the belief systems that do not support the use of contraceptives for the regulation of birth in its absolute as well as the promotion of patriarchal society in the population policy which is pronatalist ideology (Isiugo-Abanihe, 2010) in its nature may be attributable to the slow pace of demographic responses. These need to be taken considerably if modern demographic change is to be achieved in Nigeria.

The actualization of continuous reduction in fertility largely depends on the extent to which nonusers of family planning plan to use contraception in the future (NPC and ICF International, 2014). According to NDHS 2013 report, “currently married women who were not using contraception at the time of the survey were asked about their intention to use family planning in the future”. Table 4 reveals that a large percentage (63 percent) of currently married nonusers do not intend to use any method of contraception in the future compared to only 23 percent that reported they intend to use family planning methods in the future. Although the proportion of women who intend to use a method of family planning varies with the number of living children they have. Yet, the proportion of women with one to two children remains the highest (27.5 percent and 27.1 percent respectively), while the lowest among them are those with no living children (14 percent). This implies the proportion of those who do not intend to use any method of family planning in the future still remain higher than those who intend to use throughout the number of living children at the time of the survey due to contraceptive use adverse effects, according to NDHS 2013 report (NPC and ICF International, 2014).
Table 4: Distribution of Married Women (15-49) who are not using a Contraceptive Method by intention to use in the future and According to the Number of Living Children

<table>
<thead>
<tr>
<th>Respondents’ Intention</th>
<th>Number of living children</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Intends to use</td>
<td>13.9</td>
</tr>
<tr>
<td>Unsure</td>
<td>14.8</td>
</tr>
<tr>
<td>Does not intend to use</td>
<td>68.0</td>
</tr>
<tr>
<td>Missing</td>
<td>3.3</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
</tr>
<tr>
<td>No. of women</td>
<td>1,814</td>
</tr>
</tbody>
</table>
*Including those that are currently pregnant

Source: NPC and ICF International (2014)

What does this imply to multiphasic response to demographic change? Nigeria population may still not reduce to maintain an optimal level of growth. This is because, the larger percentages of the methods of birth control in Nigeria fertility history that has remained most significant is the use of different methods of contraception when compared to other methods of birth control such as abortion, defer marriage among others.

Concluding Remarks and Recommendations

It is evident that most societies are naturally characterized by a sustained natural population growth due to declining mortality rate (Davis, 1963). But then, there is need to maximize opportunities (demographic dividends), by taking urgent steps to adopt safe and different methods of birth control both at institutional and individual level. Firstly, it should be noteworthy that as the study of Kingsley Davis revealed, there was no population policy put in place in Japan and other Europeans countries that compelled them to reduce their population size. This implies that Nigeria as a country needs to be personalistic in their decisions to control birth while putting into consideration their needs to maximize opportunities (demographic dividends). Borrowing from Ansley Coale’s (1973: 65) summary of generalizing transition theory, three broad pre-conditions which are not governmental policy related but found essential for families and individuals to adopt in the quest for substantial decline of fertility within marriage:

(i) Fertility control must be within the calculus conscious choice of the couples. This means that potential parents must always consider it as an acceptable mode of thought and form of behaviour to balance advantages and disadvantages before deciding to have another child - unlike most traditional societies with their socio-religious beliefs who will consider such calculus decision as immoral and do not control marital fertility.

(ii) Reduction of fertility must be seen as beneficial to the family. This is because perceived social and economic conditions must make fertility reduction seem advantageous to individual couples.

(iii) There must be adequate knowledge and mastery of effective techniques of fertility control at all levels of the society. This means that the procedures that will prevent births must be known to couples, at the same time, there must be sufficient communication between spouses as well as sufficient sustained will, in both, to employ them successfully.

In addition to adequate knowledge and mastery of effective techniques of fertility control, fertility scientists should be encouraged to developed different methods of contraceptives with less adverse effects so that couples can be encouraged to use contraceptives in marriage to reduce fertility. Similar to this however, all users of contraceptives should also endeavour that they adopt the right methods of contraceptives compatible with their body system which will in turn promote their health with less or no adverse effect.

Secondly, at the institutional level of the society, it should be recalled that multiphasic demographic response to change is value-oriented. Therefore, those values that are not favourable to
demographic change especially the outright refusal of the use of any method of birth control based on socio-religious beliefs need to be erased by creating awareness through enlightenment across all cultures in Nigeria. While this is essential for modern demographic change, reproductive health facilities need to be made available at all levels of societies so as to reduce the rate of unmet need in Nigeria.

Also, the domestication of population policy that will be favourable to all cultures in Nigeria should be promoted, rather than uniform population policy. This will help to promote implementation of such population policy while sanctions will remain mechanisms for compliance at that local level. Coupled with this, women education and empowerment through engagement in gainful employment should be encouraged in the country. The support for egalitarian family system should be strengthened, rather than patriarchal society which largely subjugates women at all levels of decision making. In other words, family planning decisions or birth control methods should be a collaborative effort of the husband and wife so that good result could be achieved in relation to achieving demographic dividends.

References


United Nations, Department of Economic and Social Affairs, Population Division. 2015. World Population Prospects: The 2015 Revision, Key