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Attaining Nigerian Demographic Dividend: Rural Population Dynamics as Impediments

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ABSTRACT

The idea that location or geography stands in the way of economic prosperity finds tremendous support in Nigeria's rural versus urban demographic profile. This profile makes rural rather than urban Nigeria to be a greater threat in the actualization of Nigeria's quest for accelerated economic development which is practicable through earning demographic dividend. This article attempted a recapitulation of demographic transition theory and demographic dividend. Further, rural-urban differentials in selected indicators in the 2008, 2013 and 2018 National Demographic and Health Surveys (NDHS) were reported and discussed. These accentuate the notion that rural Nigeria is a bigger threat to enjoying demographic dividend. The fact that rural Nigeria clogs the wheel of national development calls for a paradigm shift in the direction of prioritizing rural needs.

Keywords: Rural Nigeria, urban Nigeria, demographic transition, demographic dividend, agriculture, farmers.

1. INTRODUCTION

"*What if geography gets in the way of the Promised Land*?" (Hausmann, 2001: 45, italics mine). This initial and puzzling question is often ignored, probably because it is "offensive" (Ibid: 45). In his work entitled '*Prisoners of Geography*' Hausmann (2001), like one of the central propositions of economic geography, maintained that geography or location is a dominant factor standing in the way of prosperity for several nations. On a first thought the idea of location determinism appears to be prejudicial and discriminative and this is understandably so. Several commentators are poised to expound the state of African development in terms of location and characters of African people. However, empirical and difficult-to-ignore evidence abound upholding the validity of location determinism. Hausmann (2001) further asserted as follows:

> There is still much we do not understand about the links between geography and economic growth. But what we do know suggests that the challenges of economic development must be examined from a very new perspective. Denying the impact of geography will only lead to misguided policies and wasted effort. Geography may pose severe constraints on economic growth, but it *need not be destiny*… Even within regions of the same country, living standards are strongly linked to geography (page 46, italics mine).

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The limitations imposed by geography or location must be identified and acknowledged in order to make it open to rectification through concerted governmental policies and planning. This is a focal assumption warranting the thesis of this article— rural as opposed to urban Nigeria is a greater threat in the actualization of Nigeria's accelerated economic development which is feasible with earning demographic dividend. The objective of this paper is first of all to recount the dictates of demographic transition and demographic dividend in an attempt to situate the understanding of the focal thesis of this article. Beyond this objective, this article was also designed to report and discuss rural-urban differentials in selected indicators in the 2008, 2013 and 2018 National Demographic and Health Surveys (NDHS). The selected indicators were total fertility rates (TFRs), crude birth rates (CBRs) and general fertility rates (GFRs). Others are use of contraceptives among married women aged 15-49, childhood mortality rates (CMRs), as well as teenage pregnancy and motherhood. This is with a view to further accentuate the notion that rural Nigeria is a bigger threat to enjoying demographic dividend. Finally, the way forward in line with empirical findings was proffered.

## 2. WHAT IS DEMOGRAPHIC TRANSITION AND DEMOGRAPHIC DIVIDEND?

The demographic dividend is a current response to the question of the relationship between fertility change and economic growth (Moreland, 2017). This question has attracted a huge debate but there is a general consensus among scholars to the effect that population and development are inversely related. The classical postulate and concern of disciplines that take interest in fertility (such as demography) is that population growth and economic development are inherently linked. In an instructive write-up on the theme of population and development, Graff and Bremner (2014) asserted that in virtually all developed countries, fertility has declined tremendously and these countries will contribute little or nothing to world population growth in the future. Contrarily, virtually all increase in world population occurs in developing countries especially the least developed ones like Nigeria where fertility is usually above four children per woman. Nigeria and many other countries in sub-Saharan Africa are at preliminary stages of the demographic transition. The demographic transition is the shift of a society from a regime of high fertility and high mortality rates to a regime of low fertility and low mortality rates. Graff and Bremner (2014) elucidated the demographic transition as follow:

> The theory of the demographic transition is that most countries were once characterized by high birth and death rates, and little population growth—Stage 1. During the transition period— Stage 2—a decline in mortality often precedes and is faster than a decline in fertility, resulting in population growth because there are more births than deaths. In Stage 3, birth rates decline until eventually in Stage 4 they reach the same level as death rates and population growth slows (page 4).

Nigeria is still around stage 2 of the demographic transition because child mortality has declined very much faster than fertility rate, making the country to experience population growth because there are more births than deaths. Rate of fertility decline in Nigeria is particularly slow and population is growing tremendously. The country awaits transition into stage 3 where birth rates will decline steadily (for more extensive discussion on the demographic transition see Dyson [2010]; Clark and Alter [2010]). The world's most economically advanced countries have completed the cycle of the demographic transition while the poorest are still struggling at the preliminary stages.

When birth rates fall, dependency ratio will fall. This is the essence of the demographic dividend. The concept of demographic dividend is the accelerated economic progress that countries with high population are opportune to usher in as there occurs a decline in population leading to the fattening of the country's population pyramid in the middle. This implies an increase in the working population and a decrease in the dependent population. The notion of the demographic dividend is another basis of ascertaining the inherent causal link between population and economic development. According to Dyson (2010: 5, bracket ours), "the falls in death rates and birth rates which in many ways define the phenomenon (demographic transition) are a key part - indeed, arguably they are the most important part - of whatever is meant by the term 'development'". When birth rates fall, a country's labor force grows rapidly over the population dependent on it.

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There occurs a fattening of the population pyramid in the middle. Population pyramid, also known as age-sex- pyramid is a graphical depiction of age and sex distribution of a country's population. In a high growth population like Nigeria, population pyramid is typically flooded at the base (see figure 1 for Nigeria's current population pyramid).
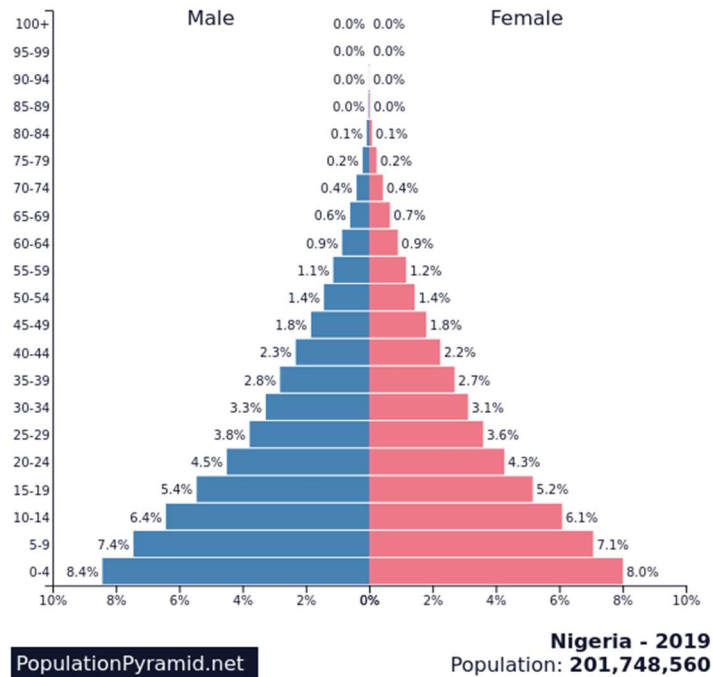
Figure 1: Nigeria's current population pyramid
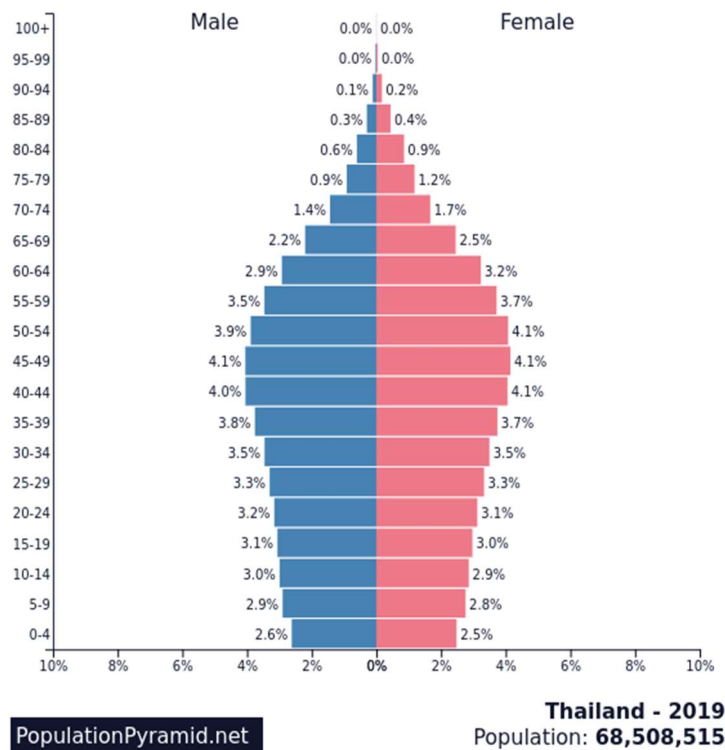Source: "Population pyramids of the world from 1950 to 2100". Accessed 29/05/19 at:
https://www.populationpyramid.net/nigeria/2019/

As lowered birthrate occurs, there is more availability of resources for further investment in economic development[1]. Young (2019) expounded the theory behind demographic dividend as follows:

> The falling shares of children in the overall population and the accompanying increasing proportions of the population in the labour force, postulated to be exogenously triggered by decline in fertility (presumed to be a consequence of family planning programmes), will inherently under certain conditions (such as investments in education, health, good governance, employment *etc.*) bring about higher productivity and faster economic growth. A phenomenon known as demographic dividend (page 37).

The attainment of demographic dividend is not automatic. The dividend period is a window of opportunity (Moreland, 2017; Ajibola, Jacob and Omotosho, 2018; Graff and Bremner, 2014). Tremendous investment in educational infrastructures, health facilities to continually improve child survival, investment in family planning services are prerequisites for ushering in demographic dividend. The demographic dividend holds great promises and it is achievable. The experience of Thailand is recounted here: Between 1970 and 2010, Thailand's fertility rate decreased from 5.5 children per woman to 2.2 children per woman (Graff and Bremner, 2014).

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[1] Interestingly, dividend period is not unchecked naturally. A continued reduction in birthrate will lead to an ageing population that will reduce the labour force. When this happens, per capita income grows very slowly and the demographic dividend becomes negative.

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This occurred as there was expansion in provision of family planning services. As birth rate lowered there were also investments in health and education and other social infrastructures resulting to better health, improved secondary school completion rates, delayed marriage and childbearing. Thailand's population pyramid evolved from an inverted V shaped structure one that looked like Nigeria's current pyramid to a middle-fattened structure (see figure 2). Indeed, Thailand is an economic success story (Graff and Bremner, 2014) whose experience has been frequently referenced in scholarly quarters.

Figure 2: Thailand's current population pyramid
Source: "Population pyramids of the world from 1950 to 2100". Accessed 29/05/19 at:
https://www.populationpyramid.net/thailand/2019/

Like her many other counterparts in sub-Saharan Africa, Nigeria is still far from attaining the demographic dividend because it is yet to experience sharp decline in her birth rate. Nigerian total fertility rate (TFR) only reduced from 5.7 in 2008 to 5.5 in 2013 and to 5.3 in 2018 (National Population Commission, 2009, 2014 and 2019). Even in 2018 the average Nigerian woman will give birth to 5.3 over the course of her childbearing years. Sub-Saharan Africa is demographically exceptional because it is the only region that is yet to undergo a general fertility decline (Cohen, 1998; Bongaarts, 2017; Singh, Bankole and Darroch, 2017). Feyisetan and Bankole (2002) anticipated that Nigerian TFR will be between 2.6 and 3.0 by the year 2050. Nonetheless, rural as opposed to urban Nigeria is greater threat to achieving the dividend. As stated earlier, this article is an attempt to underscore this thought. More specifically, this article showcases selected demographic indicators as reported in the 2008, 2013 and 2018 National Demographic and Health Surveys (National Population Commission, 2009, 2014 and 2019) to substantiate this truism.

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3. RURAL-URBAN DIFFERENTIALS IN SELECTED INDICATORS IN THE 2008, 2013 AND 2018 NATIONAL DEMOGRAPHIC AND HEALTH SURVEYS (NDHS)

The National Demographic and Health Surveys are to produce population indicators that are nationally representative. They also produce data at zonal and state levels which are typically disaggregated along rural/urban location, education, wealth quintiles, etc. Selected population indicators from 2008, 2013 and 2018[2] NDHS were extracted. These indicators have implications for decreasing birth rate which in turn has implications for attaining demographic dividend. They included total fertility rates (TFRs), crude birth rates (CBRs) and general fertility rates (GFRs). Others are use of contraceptives among married women aged 15-49, childhood mortality rates (CMRs) as well as teenage pregnancy and motherhood. All the selected indicators have bearing on women as opposed to men. The distribution of women that were involved in the 2008, 2013 and the 2018 NDHS are shown on table 1 below:

Table 1: Total number of eligible women aged 15-49 interviewed

NDHS	Women NDHS respondents		
	Urban	Rural	Total
2008	10,489	22,896	33,385
2013	15,545	23,403	38,948
2018	16,984	24,837	41,821

Source: Computed from data obtained from the reports of 2008, 2013 and 2018 NDHS

The distribution of respondents shown in table 1 shows the vastness of the NDHS samples. The trend of these distribution also shows that it increases from one survey to the other. It is therefore in tune with increasing population in Nigeria.

3.1 Rural/Urban Differentials in Total Fertility Rate

The total fertility rate (TFR) is the average number of children that a woman will have over the course of her childbearing years (15-49) considering a current birthrate (Madsen, Moslehi and Wang, 2018). For instance, the current TFR of 5.3 means that the average Nigerian woman will give birth to 5.3 children. When TFR is about 2.1, it is called replacement fertility. A sustained level of replacement fertility means that generations would only replace themselves. Table 2 shows that TFR was 5.7 in 2008 which only reduced to 5.5 in 2013 and to 5.3 in 2018. These reductions are very marginal. In the year 2008, rural women had 1.6 children more than urban women. This margin slightly reduced to 1.5 by the year 2013 and further reduced to 1.4 in 2018. The data shows that rural fertility rates are consistently higher than even the total fertility rates. These data validate the notion that rural Nigeria is a bigger threat to attaining demographic dividend.

Table 2: Total fertility rates

NDHS	Total fertility rate		
	Urban	Rural	Total
2008	4.7	6.3	5.7
2013	4.7	6.2	5.5
2018	4.5	5.9	5.3

Source: Computed from data obtained from the reports of 2008, 2013 and 2018 NDHS

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[2] The 2018 NDHS is the most recent in the series of demographic surveys the final report is yet to be out as at May 2019.

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3.2 Rural/Urban Differentials in Crude Birth Rates (CBR) and General Fertility Rates (GFR)

The CBR and GFR are also pointers of fertility levels in a country. They both have births as their numerators. The difference between the two is that the total population is the denominator for the CBR while women of reproductive age constitute the denominator for GFR. The latter is a superior indicator of fertility. The CBRs in table 3 shows that every 1,000 people had an average of 42.5 and 36.8 children in 2008 in rural and urban areas respectively. Rural people had an average of 5.7 children over the number of children that urban people had. This excess increased to 7 and then 8 in 2013 and 2018. The rural CBRs are also consistently higher than total CBRs.

The GFRs in table 3 shows that every 1,000 rural women of childbearing age had an average of 212 children in 2008 while this figure was 162 among urban women. This indicates that every 1000 rural women had 50 more children than urban women had. The 2013 and 2018 estimates show that every 1000 rural women of childbearing age had 54 and 52 more children respectively. Again, the number of children that rural women had far exceeded the total number of children that were born. Like the CBRs, the GFRs also substantiate the position that rural characteristics are more threatening to the attainment of demographic dividend in Nigeria.

Table 3: Crude Birth Rates (CBRs) and General Fertility Rates (GFRs)

NDHS	Crude birth rate			General fertility rate		
	Urban	Rural	Total	Urban	Rural	Total
2008	36.8	42.5	40.6	162	212	194
2013	35	42	39	159	213	190
2018	34	42	38	154	206	182

Source: Computed from data obtained from the reports of 2008, 2013 and 2018 NDHS

3.3 Rural/Urban Differentials In The Use Of Contraceptives Among Married Women Aged 15-49

The data in table 4 below shows that over a quarter of urban women use any method of contraception. However, less than 1 in every 10 rural women used any method of contraception according to 2008 and 2013 estimates. The 2018 estimate shows that 1 in every 10 use any method of contraceptives. The use of modern contraceptives even among urban women occurs in less than 2 among every 10 urban married women aged 15 to 49 years in the 2008 and 2013 estimates. The margin improved a little in the 2018 estimate, but this estimate still indicates that less than 2 out of every 10 women use modern contraceptives. The 2008, 2013 and the 2018 estimates show that far less than 1 in every 10 rural women use modern methods of contraception. The 2013 estimate is worst, thereby failing to indicate a progressive progression of modern contraceptive use among rural women. Meanwhile, the 2018 estimate is the best of the three estimates, indicating the latest is still the best. This accord hope for increasing use of modern contraceptive among currently married rural women of childbearing age. The use of modern methods of contraceptives is important because traditional methods have high failure rates (Ali, Cleland, and Shah 2012; Trussell 2011).

Table 4 further shows that the 2008, 2013 and 2018 NDHS indicate that close to 1 in every 10 urban married women use traditional method of contraception but about 1 in every 30 rural married women use traditional contraceptives. The three data sets under consideration indicates that over 7 out of every 10 urban married women do not use contraceptives. The situation among rural married women is poorer: roughly 9 out of every 10 rural married women do not use contraceptives. Indeed, these data show that contraceptive use is poor among Nigeria married women but this use is much poorer among rural Nigerian women. Yet, effective use of contraception is tremendously important to achieve reduced birth rate that may usher in demographic dividend. Singh, Bankole and Darroch (2017) estimated the effect of contraceptive use on fertility among sub-Saharan African women of childbearing reproductive age (15–49) between 2003 and 2014. They found that high fertility still prevails in the region and this is attributable to high desired fertility and high unmet need for contraception among women who want to space births or who desire no more children. Singh, Bankole and Darroch (2017) further found that use of contraception largely impacts fertility through preventing unwanted pregnancies and unplanned childbirths.

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Estimates also indicated that in 2014 the General Fertility Rate of sub-Saharan African was 31 per 1,000 women lower than it would have been if modern contraception was not used (Ibid). Apart from the high potential of ushering in demographic dividend, use of contraceptives is even more important for child survival. Adedini *et al*. (2015) understudied the 2008 NDHS to ascertain the effect of unmet need for contraception on under-five mortality. They found that there was increased risks of under-five mortality among children of women who had unmet need for child spacing and limiting childbirth. Contraceptive use is a significant contributor to the prevention of maternal and child mortality (Chola *et al*., 2015). No doubt, rural contraceptive use profile is a greater threat against attaining demographic dividend in Nigeria.

Table 4: Percentage distribution of currently married women age 15-49 years by contraceptive use

NDHS	Any method			Any modern method			Any traditional method			Not currently using		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
2008	25.9	9.4	14.6	16.7	6.5	9.7	9.1	3.0	4.9	74.1	90.6	85.4
2013	26.8	8.5	15.1	16.9	5.7	9.8	9.9	2.8	5.4	73.2	91.5	84.9
2018	26.4	10.0	16.6	18.2	7.2	12.0	8.1	2.2	4.6	73.6	90.0	83.4

Source: Computed from data obtained from the reports of 2008, 2013 and 2018 NDHS

3.4 Rural/Urban Differentials In Childhood Mortality Rates

Child-mortality data have huge implications for resistance to fertility change in many parts of Africa. Caldwell, Orubuloye and Caldwell (1992) asserted that decreased fertility was experienced earlier in Botswana, Zimbabwe, and Kenya. In the early 1990s, their infant mortality rates were below 70 per thousand live births. This was not the situation in many other parts of Africa where infant mortality was far higher. Achieving a reduced birthrate is therefore predicated on lowered level of infant mortality. Infant mortality is the possibility that a child will die before his or her first birthday. Infant mortality rate (IMR) is expressed per 1,000 live birth. Table 5 indicates that total IMR reduced more sharply between 2008 and 2013, from 87 to 69. However, reduction in total IMR between 2013 and 2018, from 69 to 67 is very marginal. The 2008 estimates show that 28 more infants died in rural areas over the number of infants that died in urban areas. This number only reduced marginally to 26 between 2008 and 2013. The 2018 urban/rural disaggregated data is yet to be available. IMR is another phenomenon populating the notion that rural areas constitute greater impediment to the attainment of demographic dividend in Nigeria.

Child mortality is the possibility that a child will die between his or her first and fifth birthday. Child mortality (CM) is expressed per 1,000 children that survived to their first birthday. The data on table five indicates that child mortality, like infant mortality, also reduced sharply between 2008 and 2013, from 92 to 64 for every 1,000 children. However, between 2013 and 2018 CM even increased marginally from 64 to 69. Worse still, the differences in CM in urban and rural areas is so wide. The 2008 estimate shows that there occurred 48 more CM for every 1,000 children in rural areas, over urban CM (82.7% more). In 2013, the situation was worse. There was over 100% (111.9%) more CM in rural areas over what obtained in urban areas. For every 1000 children, 47 more children died in rural areas over the number of such deaths recorded in urban areas.

Table 5: Childhood mortality rates

NDHS	Infant mortality			Child mortality			Under-five mortality		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
2008	67	95	87	58	106	92	121	191	171
2013	60	86	69	42	89	64	100	167	128
2018	[a]	[a]	67	[a]	[a]	69	[a]	[a]	132

Source: Computed from data obtained from the reports of 2008, 2013 and 2018 NDHS
[a] Report of rural/urban disaggregation of data yet to be out as at May, 2019

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Under-five mortality (U5M) is the possibility that a child will die between his or her birth and his or her fifth birthday. U5M is also expressed per 1,000 live births. Table 5 show that Total U5M, like infant and child mortality, reduced sharply between 2008 and 2013, from 171 to 128 (a reduction of 43 in the number that died per every 1,000 under-five children). Unfortunately, under-five mortality increased, though marginally, between 2013 and 2018 from 128 to 132. der-five mortality is a good indicator of socioeconomic wellness of a country (Adedini *et al*., 2015). It is unfortunate that there is a wide margin in urban/rural disaggregated data on U5M. The 2008 estimates show that 70 more children per every 1,000 under-five children died in rural areas over the number of same that died in urban areas (57.8% more). The 2013 estimates also indicate that 67 more children per every 1,000 under-five children died in rural areas over the number of same that died in urban areas (67% more). The urban/rural disaggregated childhood mortality rates are indeed reflective of the greater impediments that rural communities constitute against the achievement of demographic dividend.

3.5 Rural/Urban Differentials In Teenage Pregnancy And Motherhood
Teenage pregnancy and motherhood bear a lot of significance for fertility change. Wusu and Adedokun (2017) reported that women's gender revolution status (as defined by education/employment status) delays marriage timing and reduces fertility behaviour in Nigeria. Delayed marriage and non-marriage have been identified as significantly contributory to lowered fertility rates in Asia Pacific (Jones, 2007). In table 6, the 2008 estimate shows that 22.9% of rural teenage girls have had a live birth. This percentage increased to 24.1 in 2013 but reduced moderately to 20.9 by 2018. At least 2 in 10 rural teenage girls had birthed a child in the three periods under consideration. This is far higher than urban data where less than 1 in ten girls had birthed a child.

The distribution of teenage girls who were pregnant with their first child is similar to the previous distribution of those that have had live births. There were 87.1%, 250% and 231.5% more rural teenage girls over the percentage of urban teenage girls that were pregnant with their first child in the 2008, 2013 and 2018 estimates respectively. There were also 139.1%, 227.8% and 223.8% more rural teenage girls over the percentage of their urban counterparts that had begun childbearing in the 2008, 2013 and 2018 estimates respectively. The age-specific (15-19) fertility rates among women in table 7 also indicate that the rates for rural women exceed those of their urban cohorts by 78 births per 1,000 women in 2008, by 100 in 2013 and by 86 in 2018. Indeed, these data clearly validate the presupposition that people of rural communities constitute stronger impediments against the achievement of demographic dividend in Nigeria.

Table 6: Teenage Pregnancy and Motherhood (15-19 years)

NDHS	Percentage who have had a live birth			Percentage who are pregnant with first child			Percentage who have begun childbearing		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
2008	8.9	22.9	18.0	3.1	5.8	4.8	12.0	28.7	22.9
2013	7.5	24.1	17.1	2.2	7.7	5.4	9.7	31.8	22.5
2018	6.5	20.9	14.4	1.9	6.3	4.3	8.4	27.2	18.7

Source: Computed from data obtained from the reports of 2008, 2013 and 2018 NDHS

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Table 7: Age-specific (15-19) fertility among women

NDHS	Urban	Rural	Total
2008	70	148	121
2013	62	162	122
2018	58	144	107

Source: Computed from data obtained from the reports of 2008, 2013 and 2018 NDHS

4. FURTHER DISCUSSIONS AND WAY FORWARD

The notion that rural dwellers stand more against the attainment of demographic dividend in Nigeria has been pervaded in this article. A basic and common feature of rural communities is that livelihood is typically and deeply tied to land. Rural dwellers are typically poor farmers. Rigg (2006: 180) stated that "for most scholars and development practitioners, the poor world is largely a rural world, and in terms of livelihoods, this rural world is an agricultural one where farming predominates and where land is the critical resource". Small-holder rural farmers constitute a strikingly impoverished segment of the population. According to the FAO, "most small family farmers are poor and food-insecure" (2015: 31).

It was also stated in the Rural Poverty Report 2011 (IFAD, 2010: 47) that "poverty remains largely a rural problem, … of the 1.4 billion people living in extreme poverty in 2005, approximately 1 billion– around 70% lived in rural areas", meanwhile, "in the rural areas four out of every five households farm to some degree" (page 9). It was also asserted in the *Rural Poverty Report 2011* that more than 80% of rural households engage in varying degree of farming (IFAD, 2010). It is not such a surprise then that rural people constitute greater stumbling block to the attainment of demographic dividend.

Indeed, rural Nigeria is a clog in the wheel of national development. The clear way forward is a paradigm shift in the direction of prioritizing rural needs. One of such needs is to boost agricultural outcomes. The poorest rural households tend to depend on farming and agricultural labour (IFAD, 2010). "Although the efforts of the agricultural research and development communities over the last 40 years have led to successes in improving yields, increasing incomes and contributing to food security, these successes have not been automatic and they have not occurred everywhere. Rural communities and households continue to demonstrate tremendous adaptive capacity in the face of economic and social change, but this capacity needs appropriate social, institutional and political support" (Thornton *et al.*, 2011: 118).

Political will supporting diversification of livelihood is in order. Non-farm economies in rural communities are significant avenues of fighting poverty. In more advanced economies, between 60 to 70 percent of rural income, as opposed to the range of 20 to 30 percent in less developed economies is attributable to non-farm activities in rural communities (IFAD, 2010). Globally, the least diversification away from agriculture occurs in sub-Sahara Africa (Ibid).

The attainment of demographic dividend requires more specific demographic interventions. Educational achievement and family planning programing are about the most important determinants of the prevalence of contraceptive use in sub-Saharan Africa (Bongaarts and Hardee, 2018). Yet, efforts on family planning program in sub-Saharan Africa are typically weak (Singh, Bankole and Darroch, 2017). Bongaarts and Hardee (2018) found that improvements in family planning programming in Rwanda, Zambia, Malawi, Ethiopia, Madagascar and Burkina Faso is substantially more important than improving education for increased prevalence of contraceptive use. The success of this programming in these countries is the effect of political will and commitment at all levels of political leadership. Findings from Southern and Eastern Africa has demonstrated that women who desire to delay or cease childbearing will make use of contraceptives with effective policies and programs (Singh, Bankole and Darroch, 2017).

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Ajibola, Jacob and Omotosho (2018) found that achieving secondary education predisposed women to wanting fewer children. They concluded that "education is that best contraceptive to achieve the age structure that result in demographic dividend" (page 1). Using the 2013 NDHS data to examine determinants of fertility, Alaba, Olubusoye and Olaomi (2017) also found that secondary or higher level of education of the mother is one of the most significant factors linked with lower fertility levels. Wusu and Isiugo-Abanihe (2019) also used that 2003, 2008 and 2013 Nigerian NDHS data to determine female education level that prompts the typically inverse association between female education and fertility. They found that having secondary or higher education is significantly related to lowered fertility in northern and southern Nigeria.

Primary schooling was quite futile in reducing fertility. Indeed, heavier investments to institute staunch family planning programs especially in rural communities is urgently called for. In addition, there is a vast need to accelerate educational opportunities especially among rural women at least to the secondary school level. These recommended efforts are sine qua non in hoping realistically for Nigeria to reap demographic dividend in few decades from now.

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