

Population Dynamics in Pakistan:

Past, Present and Future

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Introduction

Pakistan is one of the largest and fastest growing countries in the world. In 2010, it ranked 6th most populous country and will stand at 4th in 2050. Pakistan's rapid population growth, during the second half of the 20th century, can largely be explained by the conventional demographic transition theory i.e. rapid decline in mortality rate combined with a gradual decline in fertility rate. Consequently, the country's population has been growing untamable since independence in 1947 i.e. from 34 million reported in the first census in 1951 to 132 million in 1998 and estimated at 183 million inhabitants in 2012.

Since the 1950, Pakistan has experienced a significant population growth rate ranging between two to four per cent per annum. During the period of 1950-1985, the country's population had grown at the average rate of 3 per cent per annum. However, it declined to an average of 2.6 per cent per annum during the period 1986-2000. In 2010, the population growth rate in Pakistan was 1.8 per cent. Pakistan is likely to continue experiencing population growth in the near and distant future at least until 2050 and more so than any other world region except sub-Saharan Africa. Thus, rapid population growth in Pakistan hindered the socio-economic development in the past and it will have to adopt the development model capable to absorb the increase. If country fails, it will be confronted with several major risks, including political instability and poverty trap.

Pakistan has remarkably young age structure. In 2010, nearly two-thirds of the Pakistani population was less than 30 years old with a median age of 21.7 years. The young age structure has been persistent in Pakistan for the last five decades. The share of school age population (0-14 years old) was on the average 40 per cent from 1950s to 2000 and estimated at 36 per cent (61 million) in 2010. The share of working-age population (15-64 years old) has been growing from 54 per cent in the 1950s to 61 per cent in 2010 (See table 1). Currently, the South Asian region along with Sub-Saharan Africa is the only region in the world with a young age structure and significant population growth. Within South Asia, Pakistan stands out with the highest population growth rate and very young age structure.

The fertility transition did not keep pace with the mortality decline in the past. In Pakistan, it was expected to start in the 1970s as a response to mortality transition. However, due to political instability, low socio-economic development and ineffective population policies, the targets for reducing fertility were not accomplished, even until recently. Thus, fertility level in the decades of 1970s and 1980s in Pakistan had remained exceptionally high and fluctuating between six and seven children per women. It is a well accepted fact that fertility decline in Pakistan started only in the late 1980s and later gained momentum in the 1990s.

Several factors contributed significantly to the fertility decline during the last decade of 20th Century in Pakistan such as overall socio-economic development, increased literacy and educational attainment particularly for female, and strengthening of family planning programmes. However, Pakistan had the highest fertility rates in 2006 among South Asian countries and most of the nations across the globe, except for Sub-Saharan Africa. Pakistan still has very high fertility rate i.e. 4.1 children per women. It is worth mentioning here that female

education has a significant effect on fertility. Women having higher education have a fewer children as compared to women with less education and so is the case of Pakistan. Women with tertiary education have already attained below replacement level fertility².

The mortality transition in Pakistan started in the 1950s. Several studies show that the country's mortality improved quite significantly during the first two decades following independence. Life expectancy at birth for both sexes has improved over the last five decades from 41.2 years in 1950-55 to 64.6 years in 2005-2010. It is interesting to note here that life expectancy at birth in Pakistan has improved linearly during the last six decades for male and female alike. For instance, during the last two decades, life expectancy at birth increased by 2.4 years for female and 2.2 years for male in Pakistan. The country has enacted substantial progress in infant mortality in recent decades. Infant Mortality Rate (IMR) has declined significantly following the independence from 177 in 1950-55 to 71 deaths per 1000 live births in 2005-10.

Pakistan has witnessed a high fertility in the past and population growth is beginning to level off as part of the demographic transition. Hence, Pakistan will experience a demographic bonus — a period of time when the share of working age population is prominent. In the next 30 to 40 years, a majority of its population will be of working age with fewer younger and still few aged citizens. In 2010, 35 per cent population of Pakistan aged below 15 years and 60 per cent of the population was in the working-age (15-64). This rising share of the working age population could be translated into subsequent rise in the rate of economic growth if country can employ them effectively. In this context, human capital will be central to the realization of this window of opportunity for rapid economic growth.

The educational achievement and literacy in Pakistan has not been impressive in the past. In a recent study, Goujon and Wazir (2011) have clearly shown that, the Pakistani educational system has failed to provide the basic infrastructure, eliminate gender imbalances and the quality of education, which would be required to enjoy the full collateral benefits of demographic bonus such as high levels of economic growth and well-being.

Future Population of Pakistan

The future population is projected by using multi-state population projection methodology. The projection model is based on the base year population with defined educational categories and differentials of each demographic component of change i.e. fertility, mortality and migration. The projection results show that the population of Pakistan will be growing significantly in the next five decades i.e. from 174 million in 2010 to 281 million in 2060 though Pakistan will manage to achieve replacement level fertility by 2035-40. The substantial population growth in the future is due to "population momentum"³. It may be mentioned that approximately half of the population

² Replacement level fertility is the level of fertility at which a population exactly replaces itself from one generation to the next. In numerical term, replacement level fertility assumes 2.1 children per women.

³ Population momentum typically referred as, for countries that have undergone the middle phase of the demographic transition, the population is growing significantly even though the fertility has fallen to or below the replacement level.

growth in 2010 is due to population momentum, which will continue during the next five decades. This momentum would lead to further increase in the working-age (15-64) population i.e. from 105 million in 2010 to 157 million in 2030 and 186 million in 2060 (See Table 1). Thus, Pakistan will need to adopt effective labor force policies to absorb the working age population. This large labor force, if well educated, skilled and sufficiently employed could be a key asset for the socio-economic well-being.

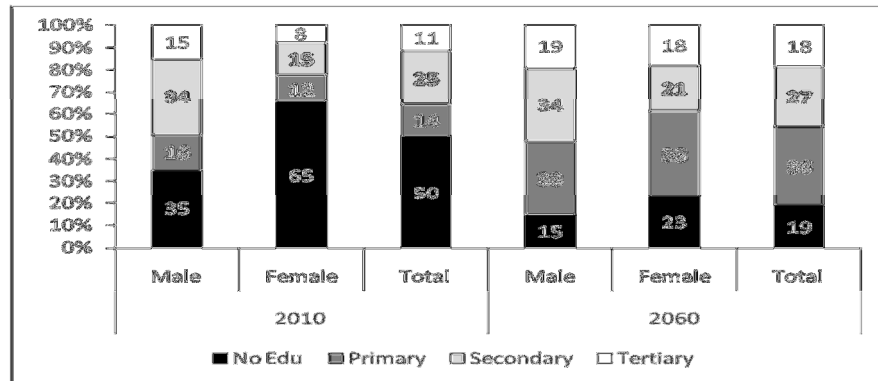
Owing to rapid fertility decline in the future, the proportion of population aged 65+ will accelerate from 7 million in 2010 to 42 million in 2060. The proportions of population aged 65+ are likely to increase six times. This rapid population aging poses many challenges for policy makers and for institutional adaption, including the financing of pension and health care system for elderly. As evident from figure 1, this large uneducated and unskilled young population along with significant proportion of aged population in the future would place extreme burden on economy, if not invested in education and health. Furthermore, the school age (below 14) population will be stagnating during the next three decades (until 2030-35) i.e. approximately 61 million. This implies that until 2035, more children will need to be enrolled in schools. More schools will be needed and more teachers to be trained and hired, particularly in the rural areas. The share of young population would however decline after 2035 i.e. from 61 million in 2035-40 to 50 million in 2055-60.

Table 1: Population of Pakistan by broad groups from 1950 to 2060

Years	Population (in millions)		
	0-14	15-64	65+
1950	15.1 (40%)	20.3 (54%)	2.1 (5.6%)
1975	29.6 (43%)	36.0 (53%)	2.5 (4%)
2010	61.3 (36%)	104.3 (61%)	6.4 (4%)
2030	63.6 (28%)	154.6 (67%)	12.9 (6%)
2060	54.2 (19%)	189.5 (68%)	34.7 (12%)

Source: UN 2012 World Population Prospects,

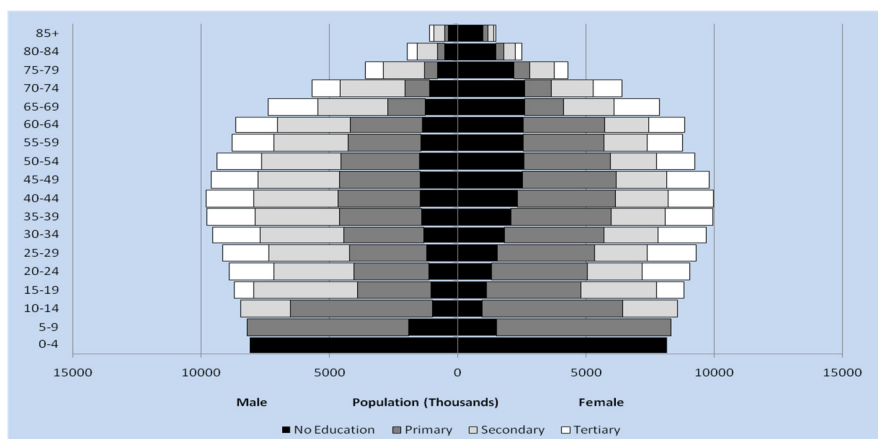
Figure 1: Share of Working-age Population by level of education in Pakistan for 2010 and 2060 according to trend education and medium fertility scenario



Source: Wazir, A., et al. (2011)

From figure 1, it is evident that 35 per cent of males and 65 per cent of females of working age population had received no education in Pakistan in 2010. The projection results show that percentage of uneducated will decline to 15 per cent for male and 23 per cent for female in 2060. The low proportion of secondary and tertiary educated male and female in the future reflect the lack of investment in education in the recent years. The share of primary level of the working age population in 2010 was 16 per cent for male and 12 per cent for female. According to the trend, this would increase to 33 per cent for male and 38 per cent for female in 2060. Moreover, it is expected that the share of overall population (male and female) with secondary and tertiary education attainment would remain stable from 2010 to 2060. However, the share of secondary educated female in Pakistan would increase significantly in next 50 years i.e. from 15 per cent to 21 per cent. Since the women enrolment in secondary and tertiary education has increased in the last decade, this would result in a doubling share of women in tertiary education of working age population i.e. from 8 per cent in 2010 to 18 per cent in 2060.

Figure 2: Population pyramid by age, sex and level of education of Pakistan in 2060



Source: Wazir, A., et al. (2011)

As expected, Pakistan will not be able to meet the Millennium Development Goals (MDGs) regarding education (goal 2 and 3), if it does not increase primary enrolment at a rate significantly higher than in the recent past. Figure 2 illustrates there would still be 23 per cent of boys and 18 per cent of girls of the age group 5-9, who would not be enrolled in school by 2015. These targets would not be reached even by 2060. This calls for an effective educational policies and further investment in education sector particularly in the rural areas. Moreover, the gender gap would not be eliminated at all levels of education in the next two decades and even far from being eliminated in 2060. However, the gender disparities would be eliminated at one level i.e. tertiary education. These projections show the tremendous improvement in favour of girls rather than boys due the fact that girls' enrollment in Pakistani universities has been amplified in the last decade.

Conclusion and Policy Implications

In Pakistan, the progress in education sector lags behind those found in most of other countries with similar level of development. Faced with the rapid population growth and consequently its labour force, Pakistan will have to adopt a development model capable of absorbing the increase. If the country fails, it will be confronted with two main risks: political instability, and a poverty trap. At present, Pakistan's development is highly dependent on its capacity to educate its population so that 300 million Pakistanis in 2050 may live prosperous lives. Education has mostly failed so far in terms of provision and quality because of the poor performance of the state machinery. That's why, Pakistan will fail to achieve the Millennium Development Goals in terms of universal primary education for both sexes and other objectives on the national and international agenda. The scenarios that we looked at show that the speed of change in advancing education has to be dramatically increased if the country would like to achieve all these goals by mid-century. This is more urgent because the age structure will become more and more favourable and as of 2025, the large labour force, if well educated, could be a major asset in the government hands.

The study points out two areas of particular concern: illiterate adult population and female education where investments will be highly needed.

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