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Fertility prospects in Pakistan

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PREFACE

In December 2009, the Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat convened an Expert Group Meeting on Recent and Future Trends in Fertility at United Nations Headquarters in New York. The purpose of the meeting was to discuss recent changes in fertility trends in the major regions of the world and in selected countries as well as their determinants. Such a discussion set the stage for the consideration of a new approach to the projection of fertility in the preparation of the official United Nations population projections.

The meeting took place from 2 to 4 December 2009. Its agenda and list of participants can be found on the website of the Population Division (www.unpopulation.org). The papers prepared by experts participating in the meeting will be issued as part of the newly launched Expert Paper series available as downloadable PDF files and accessible on the Population Division website (www.unpopulation.org).

This paper focuses on fertility levels and trends in Pakistan, and includes an examination of the proximate determinants of fertility (marriage, contraceptive use, induced abortion and lactational infecundity) and their relative inhibiting effects on fertility over time. Contextual reasons for the recent slowing of the decline in fertility are described. The paper also discusses future fertility prospects in Pakistan, government policies and programmes—particularly those concerning family planning services—and implications for population growth in the country.

The Expert Paper series aims at providing access to government officials, the research community, non-governmental organizations, international organizations and the general public to overviews by experts on key demographic issues. The papers included in the series will mainly be those presented at Expert Group Meetings organized by the Population Division on the different areas of its competence, including fertility, mortality, migration, urbanization and population distribution, population estimates and projections, population and development, and population policy.

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A. INTRODUCTION

With an estimated population of 170 million (Economic Survey of Pakistan, 2009-2010), Pakistan is the sixth most populous country and, according to United Nations estimates, is one of two countries with a population in excess of 100 million and with total fertility exceeding four births per woman (United Nations, 2009). Pakistan stands apart from other populous countries in South Asia that have experienced substantial declines in fertility prior to 1990 and thus showed markedly lower fertility levels in 2007 compared to Pakistan.

Intercensal growth rates in Pakistan between 1951 and 1981 indicated a rise in the population growth rate in the 1960s and 1970s, largely attributed to the sharp declines in mortality in the 1950s and 1960s that were not followed by fertility declines in those decades. Intercensal growth rates actually peaked in the 1961-1972 period and continued at fairly high levels in 1972-1981, after which they began to decline (see table 1). The 1981-1998 period records a decline in the population growth rate to 2.6. While the validity of the 1998 Census in Pakistan has generally been endorsed, a post-enumeration survey was not carried out. Other demographic surveys from the 1960s through the 1990s show that growth rates peaked in the late 1980s and have come down quite sharply for the first time since then. The Pakistan Demographic Survey (PDS) in 2006 showed a rate of natural increase of 1.89, which is one of the lowest figures recorded since the 1960s. This growth rate remains high compared to almost all neighbouring countries in South Asia. Moreover, recent government projections show that the growth rate has slightly increased to 2.05 in 2010.

B. FERTILITY TRENDS

1. *Past trends in fertility*

The main factor contributing to rapid population growth in Pakistan in the recent past is high fertility, demographers have struggled to reach consensus on the exact levels over the last 50 years. Whereas in the 1960s, the Population Growth Estimation (PGE) data established fertility levels of between 6 and 7 births per woman, the Pakistan Fertility Survey of 1975, with its full reproductive histories and relatively better data collection procedures, placed fertility at 6.3 births per woman for the mid-1970s. For the 1970s and 1980s, four major surveys were used to establish the most recent trends in fertility: the Population Labour Force and Migration Survey of 1979, the Pakistan Contraceptive Prevalence Survey of 1984-1985, the Pakistan Demographic surveys of 1984-1990 and the Pakistan Demographic and Health Survey (PDHS) of 1990-1991. As can be seen in figure 1, there is considerable divergence in the fertility rates presented by these various surveys: estimates for the late 1980s vary from 5.4 births per woman reported by the PDHS and 6.5 births per woman reported by the PDS in 1988. A more careful assessment of the last PDHS (1990-1991) data, with scrutiny of its reproductive histories and adjustments for data errors, provides a fertility rate of 6.1 births per woman for the period 1986-1991 (Juarez and Sathar, 2003). The Pakistan Integrated Household Survey 1991 also estimated a total fertility rate (TFR) of more than six births per woman for the five years preceding the survey, thereby supporting the argument that the TFR reported by the PDHS report was a significant underestimation of actual fertility levels.

While uncertainty about exact levels of fertility up to the 1990s remains, there is consensus on the timing of the beginning of fertility decline. Demographers agree that fertility levels in Pakistan only began declining by the late 1980s or early 1990s, remaining above six births per woman between the 1960s and 1980s (Sathar and Casterline, 1998; Feeney and Alam, 2003).

2. Fertility decline: Period I (1990-1999)

Data from the 1990s show a distinct decline in fertility levels. Collectively, estimates imply a considerable decline of around 1.5 births per woman between the late 1980s and 1990s (see table 3). The Pakistan Contraceptive Prevalence Survey, which did not collect birth histories, yielded an indirect estimate of total fertility of 5.6 births per woman for 1994-1995 based on information about the last birth. The Pakistan Fertility and Family Planning Survey (PFFPS) of 1996-1997 (National Institute of Population Studies/Macro International, 1998) provided a direct estimate of 5.4 births per woman for the period 1992-1996. The Pakistan Reproductive Health and Family Planning Survey of 2000-2001, with complete birth histories, estimated a fertility rate of 4.8 births per woman for 1997-2000. The annual Pakistan Demographic surveys showed a sharper decline from 6.2 births per woman in 1990 to 4.5 births per woman by 1999. Although the discrepancies in estimated TFRs by various data sources persisted in the 1990s, they were smaller in magnitude and the relatively sharp decline in fertility was supported by all estimates.

The speed and timing of the decline, however, was not similar for urban and rural areas. As seen in figure 2, urban areas experienced the fertility transition earlier and at a much faster speed. The TFR in urban areas declined by almost two births, from 5.6 births per woman at the end of the 1980s to 3.8 births per woman by 1997. The last few years of the 1990s show the beginning of a slowdown in urban fertility decline. On the other hand, rural fertility remained above 6 births per woman until the mid-1990s at which point it declined from 6.3 births per woman (PCPS 1994-1995) to 5.4 births per woman by the end of the decade (Pakistan Reproductive Health and Family Planning Survey (PRHFPS) 2001).

3. Fertility decline: Period II (2000-present)

Given the considerable decline in fertility experienced in the 1990s, at the turn of the current century demographers were optimistic about the speed of the fertility decline in Pakistan. An examination of the most recent data since 2000 shows the continuation of fertility decline but at a slower pace. The Status of Women, Reproductive Health and Family Planning Survey (SWRHFPS) of 2003 shows a TFR of 4.4 births per woman, while the TFR from the Pakistan Demographic Survey (PDS) 2003 is 3.9 births per woman. There remains a difference of about half a child (more or less) between the directly reported Pakistan Demographic surveys and the retrospective birth histories of the PRHFPS 2001 and the SWRHFPS 2003. The latest PDHS 2006-2007 shows TFR stagnating at 4.1 births per woman for the period 2004-2006. While there is still a divergence in rates between the two types of surveys, this is much narrower than in earlier years. The other important point is that fertility decline is seen in both sets of surveys in figure 1, albeit with differences in levels.

Rural-urban fertility decline since the turn of the century continued to follow the trends experienced at the end of the 1990s. However, rural fertility continued to decline at a consistent pace, decreasing from 5.4 births per woman to 4.5 births per woman (PDHS 2006-2007), while urban fertility decline slowed significantly, only falling 0.4 births per woman between the 1998-2000 and 2004-2006 time periods. Thus, there has been some narrowing of the rural-urban differential in fertility.

4. Prospects for the future

The prospects for further fertility decline depend on the priority that the Government of Pakistan, other policymakers in the development sector and donors assign to the expansion and improvement of family planning services. With improvements in such services there is huge potential in the form of meeting unmet demand for family planning in the country, and thus for fertility to decline at a more rapid pace than it has in the last decade. Otherwise, fertility will decline slowly and possibly erratically over the next two decades.

Pakistan has clearly seen its peak in population growth rates and in fertility levels, but the path ahead seems unclear. Much of the population growth rate will be determined by the speed of the fertility decline and population momentum. According to the Planning Commission's projections (see table 2) made in 2005, which predicted a much faster fertility decline, Pakistan would have a fertility rate of 2.4 births per woman and a population size of 181 million by 2015 and reach replacement fertility by 2020. The current rate of fertility decline, calculated in a study by the Population Council (2009), is expected to yield a total fertility level of 3.4 births per woman by 2015 and a population size of 195 million. The divergence is considerable and increases by 2030, when total population estimates vary from 218 million, according to the Planning Commission 2005 projections, to 255 million, according to the current speed of decline.

Population estimates from the United Nations *World Population Prospects: The 2008 Revision* are higher at all points in time because they start from a higher base population. Otherwise, these estimates of population growth coincide quite closely with the current scenario of fertility decline shown in figure 3. The divergence in population size in the two sets of estimates is about 10 million from the current period until 2030, but the difference increases after 2030.

In light of the slower-than-expected decline in fertility, the Planning Commission revised its population projections in 2010. The latest projections, which fall between those of the United Nations and old projection levels, show total population increasing to 210 million by 2020 and 246 million by 2030, with Pakistan reaching replacement fertility by 2030.

C. PROXIMATE DETERMINANTS OF FERTILITY

1. *Marriage*

Before the 1990s, the minor decline in Pakistan's fertility was primarily a result of women's rising age at marriage. Singulate mean age at marriage (SMAM) for women rose by 3.5 years from 16.7 years in 1961 to 20.2 years in 1981. Since then, the mean age at marriage has continued to rise with the latest data (PDHS 2007) showing SMAM for females to be 23.1 years. Singulate mean age at marriage for men also rose, though less rapidly, from a little over 23 years in the early 1960s to 25 years in 1981 and, subsequently, to around 27 years in 2007. The sharper rise in female age at marriage has reduced the spousal age gap to around four years.

According to the 1981 census, 71 per cent of women aged 15 to 19 were never married, and this proportion increased to 79 per cent by 1998. While the Pakistan Demographic Surveys have reported a higher proportion of never married among 15 to 19 year old women (an average of 73 per cent over 1984-1990, 77 per cent in 1991, 83 per cent in 1996, 86 per cent in 2001 and 89 per cent in 2006), the rising trend in delaying marriage is consistent across all data sources. The PDHS data, which are more in line with census estimates, show that the percentage of never-married women aged 15 to 19 increased from 75 per cent in 1991 to 84 per cent in 2007. Around 15 per cent of women aged 35 to 49 were married by the age of 15 whereas among the younger generation (women aged 15 to 29 years) less than 7 per cent were married by that age.

Another indicator of marriage, the median age at first marriage for women 25 to 49 years old, increased over time from 18.6 years in 1991 to 19.1 years in 2007 (PDHS 1991, 2007). Urban and rural differences persist among marriage indicators. The increase in median age at first marriage was sharpest for major urban areas, where median age at first marriage increased by 1 year to 20, compared to less than half a year to 19.4 years and 18.8 years for other urban and rural areas, respectively. Differentials in age at marriage are large across income groups and education levels. On average, a woman with no education

enters marriage one year before a woman with primary education and more than six years earlier than a woman with higher education (PDHS 2007).

These changes in marriage patterns have had a direct and fairly dramatic impact on fertility and population growth rates. The unusually high and continuously rising female age at marriage remains an anomaly among Pakistan's demographic indicators. Women in Pakistan marry much later than their counterparts in the rest of South Asia: the median age at marriage for women (aged 20 to 49) in India and Bangladesh is 17.7 years and 15.3 years, respectively, compared to 19.8 years in Pakistan (NFHS-3: India, 2005-2006). The higher age at marriage in Pakistan (attributable mainly to the "marriage squeeze" and availability of partners) is incongruous with the country's later fertility decline (Sathar, 2007).

2. Contraception

Before the late 1980s, there was little contraceptive use within marriage and therefore marital fertility did not experience a significant decline during this time period. Contraceptive prevalence rates (CPR) remained below 10 per cent for most of the 1970s and 1980s, and only reached 12 per cent by 1991. The 1990s, however, saw a distinct departure from this trend, with the CPR doubling to 24 per cent in six years (PFFPS 1996-1997), and reaching 28 per cent by the end of the decade (PRHFPS 2001).

Although the 2003 Pakistan Status of Women, Reproductive Health and Family Planning Survey (SWRHFPS) showed an increase in contraceptive use among currently married women (32 per cent), the latest PDHS 2006-2007 indicates stagnation in contraceptive use with the CPR falling slightly to 30 per cent (see table 4). The earlier rises of 2 per cent per annum in CPR in the 1990s appear to have slowed down to half their levels at about 1 per cent a year and very recently have become negative. However, ever use of contraception did not follow the same trend over the two time periods. Ever use of contraceptive methods steadily increased from 21 per cent at the start of the transition in 1991 to 34 per cent in 2001 and finally to 49 per cent, indicating a higher per annum increase since the turn of the century (2.5 per cent per annum compared with 1.3 per cent per annum in the 1990s). This implies that a notable proportion of women use contraception and drop out from current usage.

Disaggregation of contraceptive use at the regional (urban and rural) level shows a divergence in trends as well. During the 1990s, contraceptive use in urban areas increased more rapidly than in rural areas, but this trend reversed and since 2001 the rate of increase in rural contraceptive use has surpassed that in urban areas. Even though contraceptive prevalence in rural areas has begun to catch up to that in urban areas, in absolute terms rural contraceptive prevalence in 2007, at 24 per cent, had just only increased beyond the contraceptive prevalence level of urban areas back in 1991 (21 per cent).

3. Contraceptive use and fertility

Over these two time periods, the relationship between total fertility and contraceptive use in Pakistan has remained considerably strong, with only a slight variation by region. Overall, the correlation coefficient is $-.094$ with an r^2 of $.896$. The relationship between CPR and TFR in rural areas is slightly weaker than for urban areas. For rural areas, the correlation coefficient and r^2 are $-.077$ and $.778$, respectively; the correlation coefficient and r^2 for urban areas are $-.091$ and $.982$, respectively. Given the current levels of contraceptive use in rural areas, the expected TFR using the regression equation would be 5.0 births per woman, indicating that in rural areas reduction in fertility by half a child is unaccounted for by contraceptive use. The discrepancy between expected and actual TFR in urban areas is smaller, with the expected TFR only .2 births per woman greater than actual (3.5 births per woman versus 3.3 births per woman). This exercise indicates that women, particularly those in rural areas, are regulating fertility through practices other than contraception. Later marriages, infrequent sex and induced abortions are possible explanations for this finding.

4. Contraceptive method mix

At the beginning of the fertility transition, among the small percentage of contraceptive users, the most common type of family planning method was female sterilization (30 per cent of users), followed by the condom (23 per cent of users). Among the other half of current users, a quarter reported practicing a traditional method of contraception (PDHS 1990-1991). The remaining one quarter of women using contraception were using the IUD, pill or injectables. Over the subsequent 16 years, Pakistani women's choice of contraceptive methods has not changed substantially (figure 4). Female sterilization continues to be the most popular method among current users, with only a two percentage decline in its share of use. The proportion of current users choosing the condom also saw no change over this time period. While use of the IUD declined from 11 per cent to 8 per cent among users, the rest of modern methods saw slight increases in uptake. The practice of traditional methods of contraception also saw a small increase: withdrawal was the more preferred of the two common traditional methods, with 14 per cent of current users choosing this method of contraception. Trends in methods ever used are slightly different. While condoms, rhythm and pill (in that order) were the top three methods to have ever been tried by women in 1990, condoms, withdrawal and rhythm are now the three most popular methods to have been ever used by women. Over the years, the ever use of withdrawal saw the largest increase, from 20 per cent of ever users in 1990-1991 to 35 per cent in 2006-2007 (data not shown). The proportion of women who ever tried injections also substantially increased.

5. Induced abortion

While fertility levels in Pakistan have continued to fall from more than six births per woman before the 1990s to around four births at present, contraceptive prevalence has stagnated since the turn of the century. The discrepancy between total fertility and contraceptive use is reflected in the inconsistency between contraceptive use and fertility desires. Women's desire to postpone or limit their next birth has been rising steadily, with more than 50 per cent of women in the PDHS 2006-2007 sample wanting to limit childbearing and an additional 20 per cent wanting to delay their next pregnancy. Consequently, unmet need — the percentage of currently married women who are fecund, not using contraception and who do not want to be pregnant — increased from 33 per cent in the PRHFPS 2000-2001 to 37 per cent in the PDHS 2006-2007. Consistent with these findings is the trend in unplanned childbearing (the combination of unwanted births and mistimed births): the proportion of recent births that are unplanned rose from 21 per cent in 1990-1991 to 24 per cent in 2006-2007. Unmet need for contraception and the proportion of births that are unplanned confirm that a large fraction of currently married women in Pakistan are at risk of an unwanted pregnancy and potentially of having an abortion. Abortions are also a possible explanation for the evident inconsistency between low levels of contraceptive use and the rapid decline in women's parity levels.

As is the case in most Islamic and some Asian countries, in Pakistan induced abortions are against the law except when performed to save women's lives. Given that abortion is illegal under most conditions and access to safe abortion services is poor, the incidence of induced abortion would be expected to be low in countries like Pakistan. However, smaller studies and informal accounts indicate that many women would seek an abortion rather than give birth to a child they cannot afford. These studies indicate that induced abortion has been occurring in Pakistan, and indeed the medical community has long recognized that this is a widespread phenomenon and is particularly concerned about the high maternal mortality and morbidity associated with it (Guttmacher Institute, 2009).

A study carried out by the Population Council in consultation with the Alan Guttmacher Institute estimated 890,000 induced abortions in Pakistan in 2002 and an abortion rate of 29 per 1,000 women aged 15 to 49 (Population Council, 2004). This is a medium estimate of the rate: the low and high

estimated abortion rates are 25 per 1,000 women and 31 per 1,000 women aged 15 to 49, respectively. The abortion rate of 29 per 1,000 women, calculated using an indirect estimate method, is most likely an underestimate of the true abortion rate despite being moderately high compared to other countries. A more meaningful indicator is the abortion ratio (abortions per 100 pregnancies) of 14, which suggests that one in seven pregnancies in Pakistan is terminated by induced abortion. The majority of such abortions are taking place among married women with more than three children. A considerable proportion of the women who have induced abortions have tried some method of contraception and some even reported using contraceptives (albeit ineffectively) when they became pregnant (Arif and Kamran, 2006).

Sathar et al. (2007) estimated measures of total pregnancy and unwanted pregnancy to portray the broader context within which induced abortion is occurring and to measure both the absolute level of unwanted pregnancy and the probability that women who experience an unwanted pregnancy will seek an abortion. Combining abortion estimates with survey-based estimates of the proportion of recent births that are unwanted, the overall pregnancy rate, the proportion of pregnancies that are unwanted, and the proportions of unwanted pregnancies ending as births or abortions were estimated (see table 5). The unwanted pregnancy rate was 77 per 1,000 women in 2002, and 37 per cent of all pregnancies were unwanted. Abortions accounted for about two fifths of unwanted pregnancies.

D. STRENGTH OF THE PROXIMATE DETERMINANTS

The relative strength of the determinants of fertility can be measured by applying Bongaarts' framework of proximate determinants of fertility (1978). Using the equations of the framework, the indices for marriage, contraceptive use, lactational infecundity and abortion are calculated for the two time periods (see table 6 for assumptions). Results of this exercise show that over the 16-year time period, the inhibiting effects of marriage, contraception and abortion have all increased, while the effect of lactational infecundity has essentially remained the same. At the beginning of fertility decline in 1991, marriage and lactational infecundity had the strongest inhibiting effects ($C_m = .723$ and $C_i = .749$) on fertility. However, by 2007 marriage and contraception had the strongest effects ($C_m = .621$ and $C_c = .703$). While marriage continues to be the strongest proximate determinant of fertility decline in Pakistan, contraceptive use has seen the highest rate of increase in its inhibiting effect on fertility levels over the time period, 20 per cent versus 14 per cent for C_m .

E. THE BACKDROP FOR FERTILITY CHANGES: PAST, PRESENT AND FUTURE

From the late 1980s to the early 1990s fertility began to decline rapidly and the resultant expectation was a very rapid decline (Feeney and Alam, 2003; Sathar and Casterline, 1998). This expectation proved accurate until the turn of the century. Since then, fertility is continuing to decline but at a much slower pace and contraceptive use is stagnating. This section focuses on explanations for this disjuncture between the two periods by describing broad social, economic and political changes in the Pakistan. The beginning of the fertility decline coincided rather strangely with a period of return to democracy and a focus on social sectors under the Social Action Programme. It was a period of hope but was soon followed in the late 1990s with an economic downturn after a longish period of high economic growth rates in the 1980s and, of course later, by the re-entry of the military into politics with the Musharraf coup. It is difficult to disentangle the large number of factors that comprise the fabric of Pakistani society, a heterogeneous, vibrant but troubled country, and furthermore to link them to fertility changes. In the next sections, though, some of the more measurable indicators of change — urbanization, education, women's status, communications and the economy — are examined with respect to fertility changes.

1. Urbanization

Urbanization grew at a rapid rate; in fact, a striking feature of Pakistan's demographic situation is the much more rapid rate of urbanization than in India. In the 1981 census, 28 per cent of the population resided in urban areas, rising to 32 per cent in the 1998 census and projected to be close to 50 per cent in 2009. The increasing urban population is largely a result of migration from rural to urban areas. The rapid rate of urbanization has had a profound impact on the social milieu in Pakistan: as more and more Pakistanis move from rural to urban areas, even though many might move to squatter settlements and slums in big cities, they are exposed to urban influences that can lead to changing life styles and family structures and weakening social ties to rural origins.

In the 1990s, urban fertility made a departure from national trends, suggesting that urban values are reflective of greater contraceptive adoption and in favour of smaller families. While social change usually begins first in urban rather than rural areas, the difference in Pakistan was not as drastic as found in many other societies. This may be because ties with natal kinsmen and feudal linkages continue to extend their influence despite changes in residence. Certainly, social patronage and control continue to influence family formation and family size norms in urban areas though to a much lesser extent compared with rural areas. Even more so, improved road links and better transport options lead to frequent home to work travel. In the later period, post 2000, this linkage has probably resulted in considerable diffusion of ideas, with frequent rural-to-urban visits and better communication generally. It is quite possible that the narrowing of the urban-rural fertility differential reported in the last decade is probably more of a result of a flattening out of sharper earlier differences between urban and rural outlooks and values. Interestingly, provincial fertility differentials have been small, despite considerable differences in levels of development across the regions. In fact, recent research showed ethnicity to be more of a binding factor and a source of cohesion of values regarding reproductive behaviour as compared to provincial residence (Sathar et al., 2008).

2. Education

Educational differentials in fertility rates have not really mitigated: in 1991 the TFR for those with no education was 5.7 births per woman and for those with secondary or higher education was 3.6 births per woman, a difference of more than two children. In 2007 the differential was similar though TFR had declined to 4.8 births per woman for those with no education and 2.7 births per woman for those with secondary or higher education (see table 8). The differentials in contraceptive use by education have narrowed, though, from being five times higher for the no education and highest education groups in 1991 to only about twice as high in 2007.

Progress in education has been very slow. It is only very recently that children's enrolment rates have risen at the primary level from about 49 per cent for boys and 38 per cent for girls in the 1990s to 59 per cent for boys and 52 per cent for girls in the recent decade (see table 7). There are wide urban-rural disparities: enrolments are 70 per cent in urban areas, but still lag far behind in the rural areas. Secondary school enrolments are even lower, with the latest figures showing only 33 per cent for 10 to 14 year old boys and 27 per cent of 10 to 14 year old girls are enrolled at that level. Just under half the population (47 per cent) continues to be illiterate, and illiteracy is even more prevalent in rural areas. Education has been a largely neglected sector in past decades and few resources have been allocated to it until recently.

The situation is finally improving with gradual reductions in the gender gap in education and with younger generations attaining more education. The Government has also started paying direct attention to primary schooling for girls. The absolute number of primary schools, for instance, has increased several fold to about 160,000 in 2007 and likely more now. Expenditures on education have risen in recent decades but the outlay for education, whether at the household level or public sector expenditures, is still

low. Figure 5 shows that Pakistan is getting more educated albeit at a slow pace, and women still lag very much behind. The real difference with regard to societal transformation will be when girls currently attending school enter adult ages. However, it will be several years before this affects the majority of women as cohorts of women 24 or over are mostly uneducated.

A recent change, not unlike that for fertility limitation, is that demand for schooling of a certain quality has far exceeded supply. In the 1980s and early 1990s, the lament in the literature was about the “weak” demand for schooling, especially for girls’ schooling (Kim et al., 1999; Toor and Parveen, 2004; Hamid, 1993; Hamid and Siddiqui, 2001). However, now there is even a strong demand for good quality schooling for girls in rural areas. In fact, the issues now are access to schools, the availability of schools and the quality of teaching.

3. Communication

One of the most dramatic changes in Pakistan since 2000 has been the communications revolution. Media coverage, especially TV viewership of cable channels, has increased connectivity and linkages within Pakistan and to the international community. Earlier work showed the impact of mass media on reproductive intentions and behaviour, referring to the period of the 1990s (Olenick, 2000). At that time, media coverage was rather limited, and now both ownership and viewership have increased; for example, 27 per cent of Pakistanis owned a TV then compared to 55 per cent more than 10 years later. Similarly, spiralling cellular phone connectivity and cable networks spanning more than 40 channels are likely to have a definite impact on diffusing ideas that lead to social changes across the board, including impacts on reproductive intentions.

4. Women and society

Gender inequalities and the disempowerment of women in a society affect fertility and health outcomes. Pakistan is a society with growing extremes, but in general the position and status of women have improved in fits and starts over the last few decades (Shaheed and Mumtaz, 1987). The analysis here is restricted to certain measurable indicators of women’s mobility and autonomy that remain as obstacles to participation in politics, economic life and basic access to services.

Women are more visible in Pakistani society, they are certainly participating more in politics and public life, in education, and an increasing proportion of women are entering the labour force, especially in the urban areas. Yet it is still questionable whether this is likely to lead to an increase in their status within the household and within society. For example, according to the Status of Women Survey, one in three women is not allowed to leave her home alone (SWRHFPS, 2003).

Research has shown strong linkages between lower fertility and post-primary education and formal sector employment (Arif and Urooj, 2009). But the majority of women are still engaged in agriculture or in unpaid work. Female labour force participation has risen from 14 per cent to 20 per cent from 1990 to 2006. Much of this increase has been in urban areas and in unpaid work, thus creating higher and lower end types of employment. However, the small but notable proportions of women who are educated and engaged in economic activity are likely to comprise an important influence on women’s empowerment and on fertility change. Recent expansion in wage work for educated women in rural areas, such as the Lady Health Worker scheme and the hiring of female teachers and paramedics on contract basis, may be a pivotal factor for further change (Sathar et al., 2005).

5. The role of the economy and poverty

Although the economy prospered in the 1980s and again in the earlier half of this decade with high rates of growth, rises in per capita income in recent years have not been as good. However, it is increasingly apparent that social change has not been commensurate with economic progress in the prior years. In short, economic growth and social development in Pakistan are not necessarily related. This period saw a rise in economic growth rates, but did not see substantial progress in the social sectors and vice versa. It is quite possible a result of the type of growth that emphasizes economic investments without view to social investments. Unfortunately, it is not within the purview of this paper to investigate this association fully.

Recent research shows a strong association between poverty and fertility in the two periods of interest, 1990 and 2006 (Population Council, 2009). Household poverty decreased from 30 per cent in 1990 to 16.7 per cent in 2006. The proportion of households that were poor in 1990 had a larger number of resident children than did non-poor households. In 2006 the proportion of non-poor households increased and more than 50 per cent were comprised of two or fewer children. Households with fewer children have much higher savings-to-income ratios and lower consumption, especially of food items. Furthermore, the household size of non-poor households fell from 6.7 persons to 6.5 persons and the number of children on average decreased by 0.5, from 2.9 children to 2.5 children. The demographic transition had a disproportionately higher impact on non-poor households. Congruous differentials in fertility by wealth quintiles are noted in the PDHS 2007 with total fertility ranging from 5.5 births per woman to 2.0 births per woman for the poorest and richest quintiles, respectively.

F. ROLE OF PUBLIC POLICY

Pakistan recognized several decades ago that its population growth was extremely rapid and that it would soon be faced with a doubling and tripling of its population. The Population Welfare Programme has lacked firm political commitment, and at many points it has lacked funds and was even shelved under the Zia regime for two or three years. Its chequered history and rather fragile base have rendered it into a practically non-effective status. There has been a distinct revival of interest in population policy starting in the mid-1990s. The last several Prime Ministers have addressed the issue of population growth as a national priority in important public platforms.

The period following the International Commission on Population and Development marks an even greater active interest in population policies and issues of reproductive health. While reducing population growth rates remains the primary concern of the Government of Pakistan, and part of the Population Policy 2002, there is greater emphasis on providing accessible and better quality services to meet the needs of individuals. Furthermore, the need to collaborate with other public institutions on the part of the Ministry of Population Welfare, and with the private sector and non-governmental organizations (NGOs), now appears in all documents such as the Tenth Five Year Plan (2010-2014) and the Population Policy 2002.

Since 2000, health outlets have also been mandated to provide family planning services and the Ministry of Health launched a scheme of its own in 1994, a national programme of primary health care and family planning administered by 40,000 Lady Health Workers. The number of workers increased to 96,000 by 2007. A major obstacle has been the limited delivery of family planning services by the health sector in general and the Departments of Health in particular. The Lady Health Workers were found to be very effective in delivering family planning services in 2001 (Oxford Policy Management (OPM), 2002). Even following expansion of the programme into new areas, in 2008 women in households that had contact with Lady Health Workers were more likely to be using modern methods of family planning than comparable households (OPM, 2009).

In an atmosphere where major donors such as USAID were not operating in Pakistan for several years, the Government still committed scarce resources to family planning and reproductive health. This trend became even more exacerbated with international donor funds shifting in favour of reproductive health in general and HIV/AIDS in particular, and away from family planning. The NGO sector is probably the one most affected by the shortages in funding for family planning and has moved into newer reproductive health areas, such as HIV/AIDS, where funding was available. The Ministry of Health, which has the larger service delivery network, has neither prioritized family planning nor considers it as an essential duty precisely because of the existence of the Ministry of Population Welfare and its departments. Increasingly, the private sector (through social marketing) is taking on responsibility of dispensing, advertising and training in reproductive health.

The Population Policy 2002 has several notable targets of broadening responsibility for service delivery, for amassing resources and for reducing the fertility rate to a replacement level of 2.2 births per woman by 2020. Yet this is under serious review precisely because this does not seem to be an achievable target. Current trends in fertility, if extrapolated toward this target, indicate it would not be achievable even by 2030. There is awareness at the highest levels that Pakistan has strayed from prioritizing family planning, and the high levels of unmet need for family planning and their general stagnation are seen as a primary responsibility of the Government. Resources are pressed for the social sectors generally once again, given that Pakistan is spending huge amounts on the war on terror and has other priorities at this point in its history, and the consequences of low priority given to family planning in the last decade have shown up in the stagnation in contraceptive rates. Some corrective actions are under way, the results of which are yet to be seen. In fact the most recent development is a realization and renewed commitment to provide family planning services by the Lady Health Workers and the departments of health.

By the end of 2009, there was a strong move towards a new Population Policy 2010. This was instigated by several shifts on the ground such as the new National Finance Commission Award, the 18th Constitutional amendment and the slow recognition that Pakistan was off course with its objectives of the earlier 2002 policy. The 2010 Policy, though finalized through several consultations, has yet to gain Cabinet approval. It comprises the latest projections and the revised course of expected fertility decline incorporated as “planned-new” in figure 3.

G. CONCLUSIONS

Societal changes such as rapid urbanization, expansion of education and employment for women, proliferation of information through television and other communication channels, and some improvement of the economy over time have changed social values in Pakistan. These influences are believed to underlie the changes in marriage behaviour, with the rising age at female marriage and the proportions of women that do not marry at all. They would also affect reproductive intentions more directly with the large rise in desires to control fertility within marriage and the high proportions of women who either want no more children or want to space their next birth. Yet commensurate changes in fertility are lacking.

Progress, whether directly a result of official advocacy or an indirect effect of ideational change, has permeated widely and is now apparent even in rural Pakistan and among the uneducated. What is striking about the recent few years is the recognition and realization that family planning services have not kept pace with the increased demand. The high unmet need for family planning services, the high levels of unwanted fertility and the large number of induced abortions to avoid having and rearing an unwanted child are reflections of this reality. These outcomes are largely a result of women, couples and families not having easy, accessible and affordable means of preventing an unwanted pregnancy; namely, good quality family planning information and services. The stagnation of the contraceptive prevalence rate at

30 per cent and the decomposition of the intervening factors and their contribution to fertility show that fertility in Pakistan has largely been determined by marriage trends, lactational infecundability, contraceptive use and abortion, in that order. The greater potential role of contraceptive adoption is yet to be fully tapped.

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TABLE 1: POPULATION GROWTH RATES OF PAKISTAN (PERCENTAGE)

<i>Time period</i>	<i>Intercensal growth rates</i>	<i>Survey time</i>	<i>Growth rate</i>
1951-1961	2.4	1962-1965 (PGE)	2.6
1961-1972	3.6	1968-1971 (PGS)	2.4
1972-1981	3.0	1976-1979 (PGS)	3.1
1981-1998	2.6	1985-1990 (PDS)	3.2
		1990-1995 (PDS)	2.9
		1995-2000 (PDS)	2.4
		2000-2005 (PDS)	2.0
		2005-2007 (PDS)	1.9

Sources: (1951, 1961, 1972, 1981, 1998) Population Censuses of Pakistan; Population Growth Estimation (PGE) Experiment; Population Growth Survey (PGS) (1968, 1969, 1971); Pakistan Demographic Surveys (PDS) (1985-2007).

TABLE 2: TOTAL PROJECTED POPULATION OF PAKISTAN BY DIFFERENT SCENARIOS (MILLIONS)

	United Nations <i>World Population Prospects: The 2008 Revision</i>	Current rate	Planning Commission Pakistan (2005)	Planning Commission Pakistan (2010)
2000-2005	157.0	148.2	146.4	
2005-2010	175.2	166.1	160.9	168.2
2010-2015	195.1	185.5	175.0	182.6
2015-2020	215.9	206.0	189.1	200.9
2020-2025	236.3	226.8	202.2	218.9
2025-2030	256.0	246.7	214.3	234.9
2030-2035	275.2	265.4	225.6	
2035-2040	293.7	282.7	236.1	
2040-2045	311.4	298.6	245.7	
2045-2050	327.7	314.0	254.0	

Sources: United Nations, *World Population Prospects: The 2008 Revision*, available from <http://esa.un.org/unpp/index.asp?panel=1>; Population Council 2009. Section 1 in Pakistan's Demographic Transition in the Development Context; Planning Commission, Government of Pakistan.

TABLE 3: TOTAL FERTILITY RATES OF PAKISTAN BY VARIOUS DATA SOURCES OVER THE LAST THREE DECADES

<i>Source</i>		<i>Source</i>		<i>Source</i>	
PFFPS1982-1987	7.7	PDS 1990	6.2	PDS 2000	4.3
PDS 1984	6.9	PCPS 1994-1995	5.6	PDS 2001	4.1
PCPS 1984-1985	6	PFFPS 1992-1996	5.4	PSWRHFS 2001-2003	4.3
Average	6.9	Average	5.7	Average	4.2
<i>Source</i>		<i>Source</i>		<i>Source</i>	
PDS 1985-1987	6.9	PDS 1996	5.5	PDHS 2004-2006	4.1
PDHS 1986-1991	6.1	PDS 1997	5	PDS 2005	3.8
PIHS 1987-1991	6.3	PRHFPS 1997-2000	4.8	PDS 2007	3.7
Average	6.4	Average	5.1	Average	3.9

Sources: Pakistan Contraceptive Prevalence Survey (1984-1985); Pakistan Demographic Surveys (PDS) (1984, 1985, 1986, 1987; 1996, 1997, 2000, 2001, 2003); Pakistan Integrated Household Survey (PIHS) (1991); Pakistan Demographic and Health Survey (PDHS) (1990-1991); Pakistan Contraceptive Prevalence Survey (PCPS) (1994-1995); Pakistan Fertility and Family Planning Survey (PFFPS) (1996-1997); Pakistan Reproductive Health and Family Planning Survey (PRHFPS) (2000-2001); Status of Women, Reproductive Health and Family Planning Survey (SWRHFS) (2003); Pakistan Demographic and Health Survey (PDHS) (2006-2007).

TABLE 4: CONTRACEPTIVE USE OF RURAL AND URBAN POPULATIONS OF MARRIED WOMEN IN PAKISTAN AGED 15-49, 1991-2007 (PERCENTAGE)

		1991	1994	1997	2001	2003	2007
Overall	Current Use	11.9	17.8	23.9	27.6	32	29.6
	Ever Use	20.7	28	35.7	40.2	42.8	48.7
Regional Current use	Rural	5.8	11.0		21.7	26.5	23.9
	Urban	25.7	31.9		39.7	43.5	41.1

Sources: Pakistan Demographic and Health Survey (PDHS) (1990-1991); Pakistan Contraceptive Prevalence Survey (PCPS) (1994-1995); Pakistan Fertility and Family Planning Survey (PFFPS) 1996-1997; Pakistan Reproductive Health and Family Planning Survey (PRHFPS) (2000-2001); Status of Women, Reproductive Health and Family Planning Survey (SWRHFS) (2003); Pakistan Demographic and Health Survey (PDHS) (2006-2007)

TABLE 5: ESTIMATED PREGNANCY RATE, GENERAL FERTILITY RATE, ABORTION RATE, UNWANTED PREGNANCY RATE AND PERCENTAGE OF PREGNANCIES THAT ARE UNWANTED, PAKISTAN, 2002

<i>Pregnancy rate</i>	<i>General fertility rate (GFR)</i>	<i>Abortion rate</i>	<i>Unwanted pregnancy rate</i>	<i>Percentage of pregnancies unwanted</i>
Per 1,000 women 15-49	Per 1,000 women 15-49	Per 1,000 women 15-49	Per 1,000 women 15-49	
205.8	145.2	28.9	76.7	37.3

Source: Sathar, Singh and Fikree (2007).

TABLE 6: BONGAARTS' PROXIMATE DETERMINANTS OF FERTILITY

	1991	2001	2007
C_m^*	.723	.667	.621
C_c^{**}	.880	.723	.703
C_a^{***}	.951	.903	.866
C_i^{****}	.749	.756	.766
$C_m \times C_c \times C_a \times C_i$.453	.329	.290
Exp TFR ^{##}	6.57	4.77	4.20

Sources: Pakistan Demographic and Health Survey (PDHS) (1990-1991); Pakistan Reproductive Health and Family Planning Survey (PRHFPS) (2000-2001); Pakistan Demographic and Health Survey (PDHS) (2006-2007).

* $C_m = TFR/TMFR$

** $C_c = 1 - 1.18ue$, where $e = .85$

*** $C_a = TFR/TFR + A$, where $A = 0.4(1+u) * TA$ (abortion rate for =20 per woman per year, for 2001 =29; for 2007 =35)

**** $C_i = 20 / (18.5 + i)$, where $i = 1.5 + 0.56(L)$

Assuming $TF = 14.5$

TABLE 7: SELECTED EDUCATION INDICATORS OF PAKISTAN OVER TIME (PERCENTAGE)

Indicators	1990-1999			2000-2009			Latest			Period (Latest)
	M	F	T	M	F	T	M	F	T	
Primary enrolment rate, (Age 5-9, Class 1-5)	49	38	44	55	47	52	59	52	55	PSLM 2007-2008
Secondary enrolment rate, (Age 10-14, Class 6-10)	31	18	25	31	24	28	33	27	30	PSLM 2007-2008
Literacy rate (Population 10 years or over)	53	30	43	67	42	53	69	44	56	ESP 2007-2008

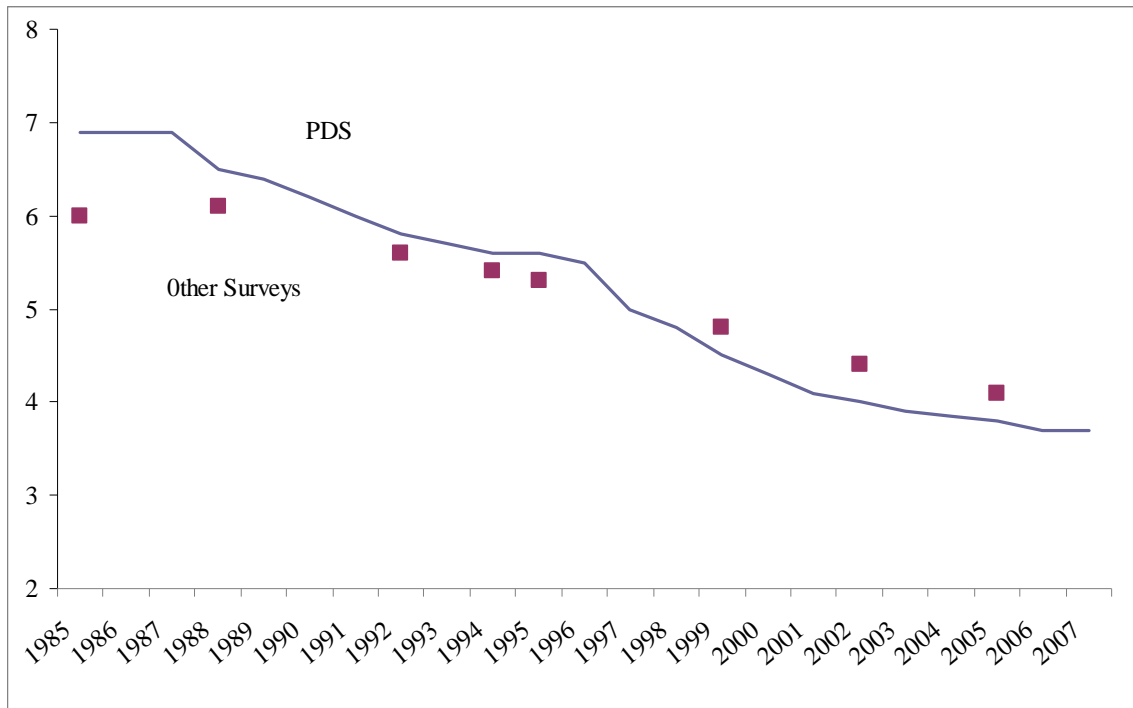
Sources: Economic Survey of Pakistan (2007-2008); Pakistan Standard of Living Measurement Survey (2007-2008)

TABLE 8: EDUCATION DIFFERENTIALS IN CONTRACEPTIVE USE AND TOTAL FERTILITY RATES OF PAKISTAN, 1991-2007

Levels of education	CPR (percentage)		Total Fertility Rate (TFR) (births per woman)	
	1991	2007	1991	2007
None	7.8	25.3	5.7	4.8
Primary	17.8	34.4	4.9	4.0
Middle	29.5	37.2	4.5	3.2
Secondary +	38.0	40.7	3.6	2.7

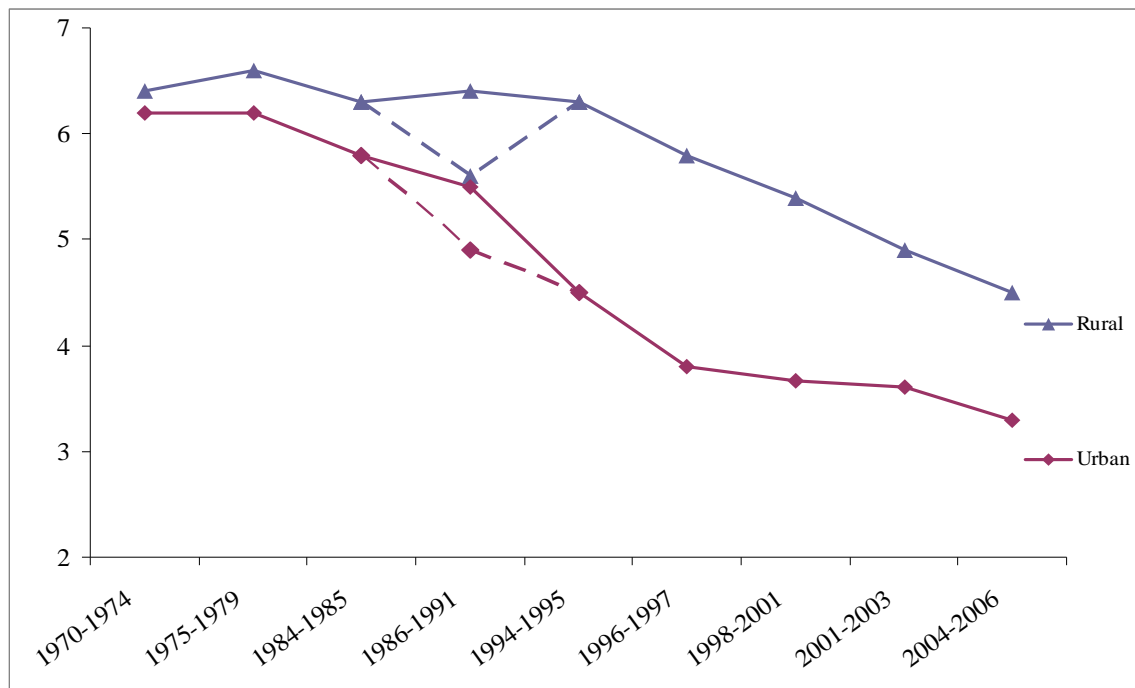
Sources: Pakistan Demographic and Health Survey (PDHS) (1990-1991); Pakistan Demographic and Health Survey (PDHS) (2006-2007)

Figure 1: Differences in total fertility rate of Pakistan, 1985-2007



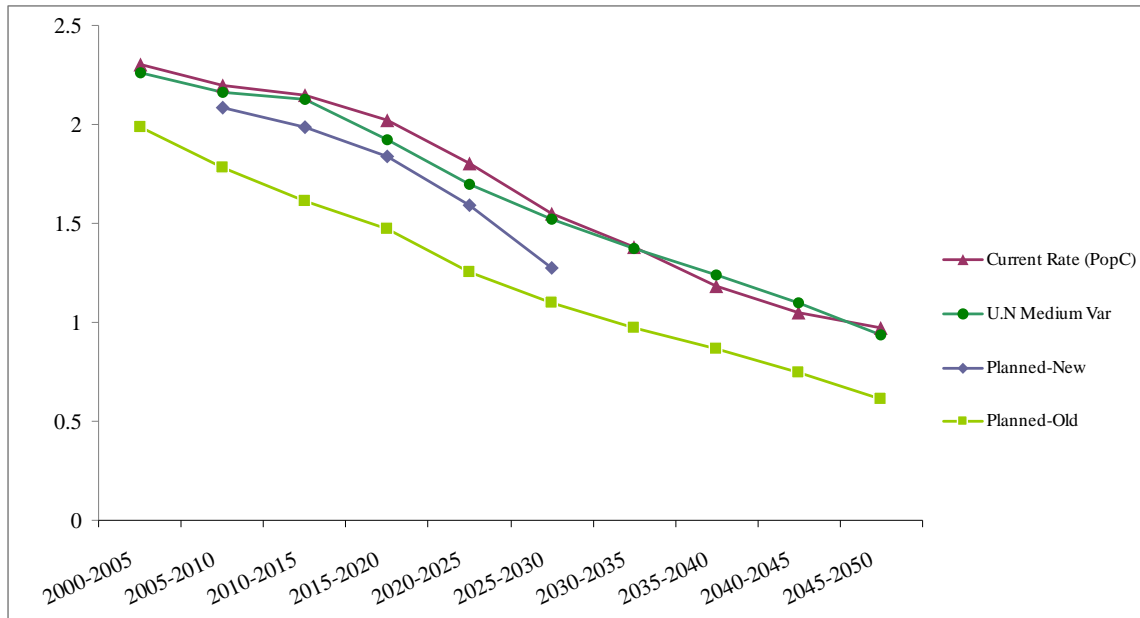
Sources: Pakistan Demographic Surveys (PDS) (1985-2007); Pakistan Contraceptive Prevalence Survey (PCPS) (1984-1985); Pakistan Demographic and Health Survey (PDHS) (1990-1991); Pakistan Contraceptive Prevalence Survey (PCPS) (1994-1995); Pakistan Fertility and Family Planning Survey (PFFPS) (1996-1997); Pakistan Reproductive Health and Family Planning Survey (PRHFPS) (2000-2001); Status of Women, Reproductive Health and Family Planning Survey (SWRHFPS) (2003); Pakistan Demographic and Health Survey (PDHS) (2006-2007)

Figure 2: Rural and urban total fertility rates of Pakistan, 1970-2006



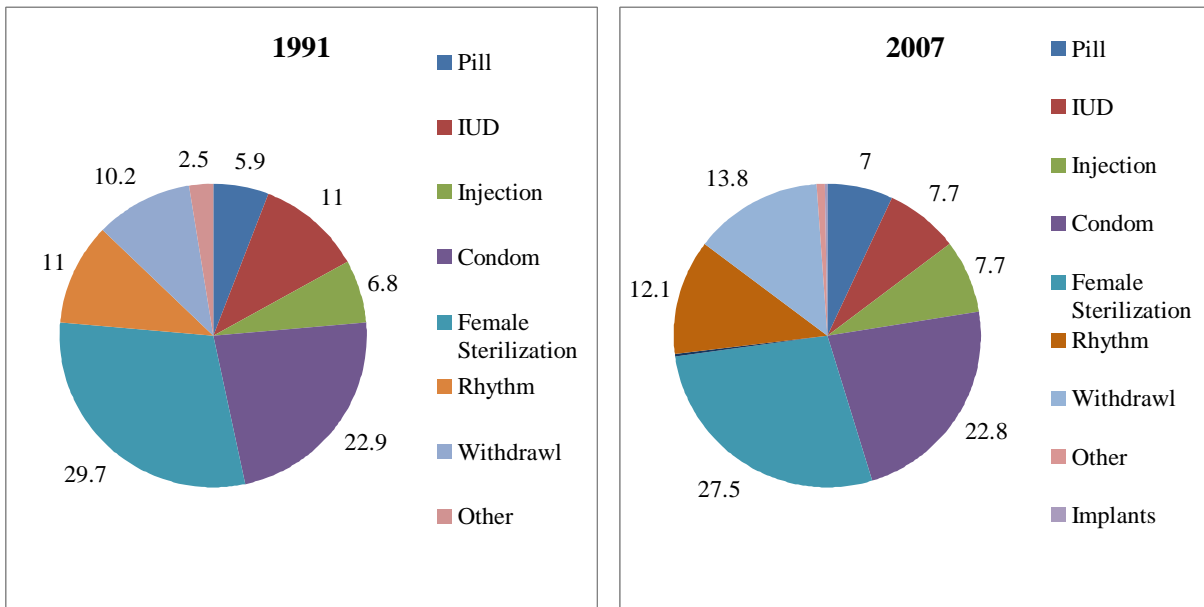
Sources: Pakistan Fertility Survey (1975); Pakistan Labour Force and Migration Survey (1979); Pakistan Contraceptive Prevalence Survey (1984-1985); Pakistan Demographic and Health Survey (PDHS) (1990-1991); Pakistan Contraceptive Prevalence Survey (PCPS) (1994-1995); Pakistan Fertility and Family Planning Survey (PFFPS) (1996-1997); Pakistan Reproductive Health and Family Planning Survey (PRHFPS) (2000-2001); Status of Women, Reproductive Health and Family Planning Survey (SWRHFPS) (2003); Pakistan Demographic and Health Survey (PDHS) (2006-2007).

Figure 3: Estimated and projected population growth rates of the total population of Pakistan, 2000-2050, by source



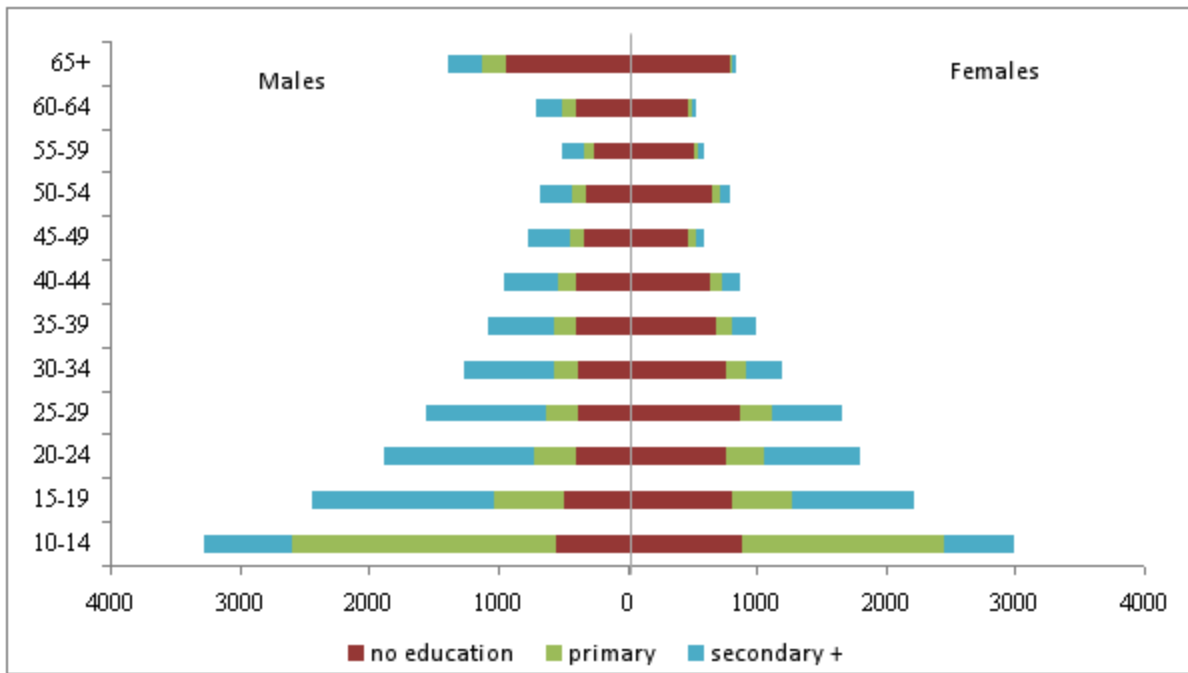
Sources: United Nations World Population Prospects: The 2008 Revision, available from <http://esa.un.org/unpp/index.asp?panel=1>; Population Council 2009. Section 1 in Pakistan's Demographic Transition in the Development Context; Planning Commission, Government of Pakistan.

Figure 4: Changes in contraceptive method mix, 1991 and 2007 (percentages)



Sources: Pakistan Demographic and Health Survey (PDHS) (1990-1991); Pakistan Demographic and Health Survey (PDHS) (2006-2007)

Figure 5: Population-education pyramid 2007



Source: Pakistan Demographic and Health Survey (PDHS) (2006-2007)