
UN/POP/CFT/2002/BP/6

11 March 2002

ENGLISH ONLY

**EXPERT GROUP MEETING ON COMPLETING
THE FERTILITY TRANSITION**

Population Division

Department of Economic and Social Affairs

United Nations Secretariat

New York, 11-14 March 2002

**FERTILITY LEVELS AND TRENDS IN COUNTRIES WITH
INTERMEDIATE LEVELS OF FERTILITY***

Population Division**

*This document was reproduced without formal editing.

**Department of Economic and Social Affairs, United Nations Secretariat.

Abstract

This paper focuses on fertility trends and associated factors in 74 countries with intermediate levels fertility, that is, those countries whose total fertility rates is estimated to be between 5 and 2.1 births per woman during the period 1995-2000. For the past three decades, fertility has been declining in all countries. The pace of decline experienced by each country varied according to their level of fertility during the early 1970s. Demographers have long sought indicators reflecting the socio-economic conditions that would trigger fertility declines in pre-transition countries and it was assumed that once fertility decline started it would continue unabated. Findings from this study suggest that strong family planning programs seem to have helped once the transition started, as witnessed by the declines in fertility among older women and by increasing contraceptive prevalence. However, the central questions remain as to whether fertility in these countries will decline to replacement or below-replacement levels without further improvements in socio-economic conditions and as to whether the relatively low fertility can be sustained without these improvements.

Introduction

Perhaps the most significant demographic change over the past three decades has been the substantial decline in fertility in all areas of the world. Since 1970-1975 world total fertility has declined by 37 per cent: from 4.5 births per woman to the 1995-2000 level of 2.8. The large decline at the global level reflects different changes in reproductive behaviour in especially populous countries such as India, Indonesia, Bangladesh and Pakistan whose total fertility rates in 1970-1975 were above 5 children per woman.

In 1970-1975, 106 countries or areas representing 43 per cent of the world's population had fertility rates at 5 children or more per woman (table 1). Since 1970-1975, the majority of countries have progressed through the different stages of the fertility transition. Thus, the current (1995-2000) distribution of countries according to the level of fertility has changed considerably. It is estimated that just 49 countries with a total population of 770,000 have fertility levels of 5 or more children per woman. An equally striking development is that by 2000 as many as 64 countries had fertility levels at or below replacement level, more than three times the number in 1970-1975. Indeed, the percentage of the world's population living in countries with total fertility at or below replacement is 44 per cent compared with 43 percent in countries with intermediate levels of fertility and 13 per cent in countries with high fertility (above 5 children per woman). The majority of countries (74) have intermediate levels of total fertility rates that is, less than 5 children and more than 2.1 children per woman. Those include India, Indonesia, Brazil and Bangladesh.

Although there is little consensus regarding the specific conditions for fertility decline, it is possible to discern the commonalities among groups of countries that have begun fertility decline, commonalities that are coherent with the theoretical perspectives on the factors associated with fertility decline. The driving force of fertility decline is socio-economic development, in particular, decline in mortality, female education and labour force participation, urbanization and family planning programmes. The lack of a single or even a "most important" factor in the explanation of fertility decline, however, renders the task of predicting future fertility trends difficult. What factors should be taken into account when projecting fertility into the future? Does a fast pace of decline in the recent past ensure a continuation of such trends?

The aim of this paper is to describe what is known about fertility trends in the 74 countries with intermediate levels of fertility¹ and their relationship with factors of fertility decline. The first section documents levels and trends of fertility since the 1970s. The second section explores the two most important proximate determinants: marriage and contraceptive use. The third section discusses the relationship of fertility with selected socio-economic factors, namely, education and type of residence.

A. LEVELS AND TRENDS OF FERTILITY

According to the latest available estimates of fertility from national sources for the period 1990-2000², countries with intermediate levels of fertility are spread quite evenly over the range between TFRs of 5 and 2.1 births per woman. At the high end of the range (rates higher than or equal to 4.5 children per woman) are Botswana, Ghana, Kenya, Lesotho and Sudan in Africa, Jordan, Syrian Arab Republic and United Arab Emirates in Asia and Guatemala, Haiti and Honduras in Latin America and the Caribbean. Whereas the high intermediate fertility countries in Africa are from all regions except Northern Africa, in Asia, the countries at the high end of intermediate fertility are from Western Asia, and in Latin America and the Caribbean, from Central America (table 2)³. At the lower end (less than 3.0 births per woman) are South Africa and Tunisia in Africa; nine countries in Asia and another nine in Latin America and the Caribbean.

The fact that countries are at the upper or lower end of intermediate fertility range does not say much about the stage of the transition they are in or their position relative to the other countries in the region. For example, Ghana, Kenya and Jordan are leaders in the fertility transition in their respective regions but have fertility rates at the upper end of the intermediate fertility range, whereas Guatemala, Haiti and Honduras that have similar high levels, can be considered laggards as many other countries in Central America have total fertility rates of below 4 children per woman.

Table 2 also shows the average annual decline for each country over the period 1970-2000. Algeria and Viet Nam show the fastest decline of more than 2 children per decade. Other countries with declines above 1.5 children per decade include the Islamic Republic of Iran, Libyan Arab Jamahiriya, Mongolia and Morocco. Among the countries with a slow pace of decline of half a child per decade or less are Argentina, Chile, Guatemala, Haiti, Israel, Lesotho, Malaysia, Paraguay and Uruguay. All of the fast decline countries, except for Viet Nam, started

¹ According to the 2000 Revision of Estimates and Projections of Population (United Nations, 2001) there are 74 countries with fertility levels between 5 and 2.1 births per woman. Fifteen in Africa, 25 in Asia, 26 in Latin America and the Caribbean, 7 in Oceania and one, Albania, in Europe. Many of these countries do not have a reliable civil registration system and national estimates of fertility are provided by censuses and demographic surveys, which although a good source of fertility data, do not provide up-to-date information. In countries where there is reliance on censuses and surveys for fertility data, estimates for the period 1995-2000 are arrived at by taking into consideration the latest available data.

² The TFR estimates may differ from those estimated by United Nations for the period 1995-2000 because they are derived from censuses, surveys and registration data and have not been adjusted.

³ Table 2 shows estimates of total fertility rates from censuses, surveys and registration data for dates around 1970, 1980, 1990, 1995 and 2000. Recent data, for around 2000, are available for only 19 countries but all countries have at least one estimate in the period 1990-2000.

the 1970s with total fertility rates of above 6 children per woman. At the same time, the slow decline countries started the 1970s with total fertility rates below 5 children per woman, except for Guatemala, Lesotho and Paraguay. Indeed, as figure 1 shows, and is to some extent to be expected, the pace of decline is positively related to the initial level of fertility in the intermediate fertility countries. Countries that started out at relatively high levels of fertility had a faster pace of decline than those that started out at lower levels.

Of particular interest are fertility trends in Bangladesh, Brazil, India and Indonesia because of their population size. These countries comprise 58 per cent of the population of countries with intermediate fertility levels. All, except for India, had fertility levels above 5 children per woman in the early 1970s and declined, on average at a rate of about one child per decade. By the 1990s, the total fertility rate in Bangladesh had declined to 3.3 births per woman at which level it remained for the second half of the 1990s, whereas that of Brazil and Indonesia had declined to 2.6 and 2.8 births per woman respectively. India experienced a slightly slower decline in fertility over the past three decades 0.8 children per decade: from 4.7 in 1979 to 3.3 in 1997.

Overall the average pace of decline has slowed in recent decades. The average decline⁴ between 1970 and 1980 was 0.11 per year or 1.1 children over the decade. Between 1980 and 1990, the decline had slowed to 0.8, and between 1990 and 1995 to 0.07 per year. This pace held steady over the next five-year period: 1995-2000. A comparison of the trend for Nepal and Turkey (figure 2) shows that the slow-down is related to lower levels of TFR. In Nepal, as the TFR fell from 6.0 in 1974 to 4.1 in 2000, the pace of decline was progressively higher in each decade since the 1970s. In the case of Turkey, TFR fell from 5.7 births per woman in 1970 to just 2.4 in 1998. The pace of decline while high in the 1970-1980 period was much slower in the more recent decades. Thus, in the late 1990s, Nepal had higher fertility and a faster pace of decline than Turkey that had lower fertility and a lower pace of decline.

Recently, demographers have been interested in instances where fertility decline appears to have stalled. In particular, the interest stems from two cases, Bangladesh and Egypt, where TFR had slowed its decline considerably. In both countries the TFR is still at relatively high levels (around 3.5 births per woman) and both had experienced fast declines in the past. In Bangladesh, the TFR for 1994 was 3.4 births per woman and that for 1997 was also 3.4 births per woman. In Egypt, the TFR in 1995 was 3.7 births per woman, which declined slightly to 3.5 in 1998. In the case of Egypt, although not exactly a stall in fertility decline, the slow-down after years of rapid decline raises concerns about future trends. The stalls in Egypt and Bangladesh are a recent phenomenon but there are a number of countries in the intermediate fertility range where fertility has been declining at a very slow pace since the 1970s and from relatively low levels. Those include Argentina, Chile, Israel and Uruguay. In Malaysia, fertility declined by 1.4 children over 28 years to reach 3.3 births per woman in 1998; in Israel by 1.1 children over 27 years to reach 2.9 births per woman in 1997. In Israel and Malaysia, fertility has stalled at 3.3 and 2.9 births per woman, respectively, since 1990. In Chile, fertility declined by 0.9 children over 25 years to 2.4 births per woman in 1995; in Uruguay, a decline of 0.7 children over 25 years to 2.3 births per woman in 1995; and in Argentina by 0.6 children in 27 years reaching a TFR of 2.6 births per woman in 1997.

⁴ Estimates for 13 countries are available for all ten-year intervals between 1970 and 2000 and for around 1995. The average pace of declines quoted here are for those 13 countries which include Morocco and Tunisia in Africa, Bangladesh, Turkey, Nepal, Kyrgyzstan, Malaysia and Israel in Asia, and Peru, Colombia, Venezuela, Costa Rica and Argentina in Latin America and the Caribbean.

a) Age patterns of fertility

During the early stages of fertility decline, fertility often decreases more at older ages than at younger ages resulting in the lowering of the mean age at childbearing. This happened in the developed countries until the 1970s. A similar pattern of change is typical for many developing countries where initial declines in fertility at the younger ages due to increasing age at marriage are more than offset by stopping behaviour among high-parity older women. Table 3 shows the percentage of the total fertility rate contributed by those aged 15-24, 25-34 and 35 and over averaged for four groups of countries. In South-central Asia, South-eastern Asia and Latin America and the Caribbean the mean age at childbearing appears to have declined over the past three decades and the most recent estimates show that less than one-fifth of total fertility occurs to women over 35 years of age. In the case of sub-Saharan Africa, a similar trend is evident although the proportion of the total fertility at the older ages is still relatively high (24 per cent). In Northern Africa and Western Asia, the change in the age pattern of fertility is more in line with that experienced in developed countries after 1970, that is, an ageing of the fertility schedule. Whereas the proportion of total fertility contributed by the youngest age group declined from 30 per cent to 25 per cent, among older women the proportion increased from 23 to 25 per cent.

Figure 3 shows age-specific fertility rates for the four groups of countries averaged for the earlier period and the most recent period. Except for Northern Africa and Western Asia, it is striking that very little decline in fertility has occurred among the youngest age groups. In Latin America and the Caribbean, as in sub-Saharan Africa, there appears to be little or no decline among women 15-19 years. Moreover, the adolescent rates in the two groups of countries are quite high at 100 births per 1,000 women. This is true to some extent in South-central and South-eastern Asian countries, although the recent average adolescent fertility rate is much lower at 59 births per 1,000 women.

In summary, it can be said that while the majority of countries with fertility rates between 5 and 2.1 children experienced fertility declines over the past three decades and can be termed "in transition", the pace of decline has been uneven. Countries that are at the high end of the intermediate fertility range appeared to have had a faster pace of decline in the 1990s as compared with those at the lower end. The pace of decline is, to a large extent, related to level of fertility rather than calendar period. The question remains as to how long the current pace of decline will continue and to what level before it stabilizes. In other words, when does the demographic transition end?

A number of countries have reached fairly low levels of fertility and are experiencing very slow declines. In Argentina, Chile and Uruguay (figure 4) recent declines have mostly occurred to women in the prime childbearing ages while adolescent fertility remains high and unchanging. The age pattern of fertility in these countries remains young although the most recent estimates show an increase in fertility among women aged 35 and over while fertility declined in age groups 20-24 and 25-29 (but not 15-19). The rise in fertility at older ages, in conjunction with a fall at the younger ages, may be indicative of recuperation of the previously postponed births – the phenomenon observed in several European countries. This hypothesis is consistent with the increase of the age at first birth, which appears to be happening in Chile, at least. In Israel and Malaysia, the other two countries where fertility has been declining at a slow pace, especially in the recent past, recent age patterns of fertility also show declines in rates among younger women and increases among older ones. It is likely that both postponement and recuperation are also taking place there. If that is the case, the postponement-recuperation effect is likely to continue and even strengthen from one cohort to the next. Postponement of births depresses the TFR but

the effect of recuperation is to inflate the TFR. The degree to which one or the other occurs determines the level of TFR.

These observations are made only on the basis of the analysis of levels, trends and age patterns of fertility. Other factors are important for the understanding of fertility trends, some of which are reviewed in the sections below.

B. PROXIMATE DETERMINANTS OF FERTILITY

This section addresses the two major factors—marriage and contraception—that affect a woman’s risk of getting pregnant, and hence, a population’s fertility level and patterns.

a) Marriage

In most countries of the world, especially the less developed ones, the family continues to be the unit in which reproduction takes place. Marriage⁵ usually marks the beginning of family formation and as such affects fertility directly through its impact on the duration of a woman’s exposure to the risk of pregnancy. Age at marriage is therefore a primary indicator of this exposure. Tables 4 and 5 present the timing of marriage in countries⁶ with intermediate levels of fertility. This timing is measured by the proportion of women aged 15-19 and 20-24 who have ever married as well as the singulate mean age at marriage (SMAM). In the 1990s, the proportion of ever-married women aged 15-19 varies from 1 per cent in Libyan Arab Jamahiriya to over 40 per cent in Bangladesh and Nepal. Similarly, the proportion of ever-married women aged 20-24 varies from 12 per cent in Libyan Arab Jamahiriya to over 80 per cent in Bangladesh, Kyrgyzstan and Nepal. At the regional level and on average, these proportions are lower in Africa (11 per cent and 46 per cent respectively) than in Asia (16 per cent and 59 per cent respectively) and Latin America and the Caribbean (20 per cent and 59 per cent respectively).

Table 4 shows that the proportions of women aged 15-19 and 20-24 who have ever married have been decreasing from the 1980s to the 1990s, which points to a trend in rising age at marriage. Figure 5, which plots the percentage change in the proportion ever married against the percentage change in age-specific fertility rate for two regions—Northern Africa and Western Asia, South-central and South-eastern Asia—where data are available shows that this decrease in marriage among young age groups has been associated with a decrease in fertility within these age groups. This relationship is much stronger among women aged 15-19 as the R^2 values of the linear regression lines that are fitted through the data points show. This figure also reveals that the declines in fertility and proportion ever married have been higher in Northern Africa and Western Asia than in South-central and South-eastern Asia. The fertility depressing effect of the decline in proportion ever married among women aged 15-19 also shows at the total fertility level. Almost two-thirds of the 11 countries that have experienced the fastest fertility decline (decline in TFR of at least 1.5 children per woman per decade over the period 1970-2000) have less than 10 per cent of their women aged 15-19 who have ever married. On the contrary, the great majority (over 80 per cent) of the 43 countries that have experienced slower fertility declines have more than 10 per cent of their women aged 15-19 who are ever married.

⁵ Marriage here refers to recognised marital and consensual unions.

⁶ Only countries with a population of 1 million or more are considered in this section. There are 53 such countries.

The SMAM values presented in Table 5 show that in the 1990s, among the intermediate level fertility countries, women who married for the first time by age 50 did so on average at age 24 in Africa, at age 22 in Asia and at age 23 in Latin America and the Caribbean. The highest SMAM is Jamaica's (age 33.2 in 1982) while the lowest are that of Bangladesh, India and Nepal (age 18.1 in 1989, age 19.3 in 1991 and age 18.5 in 1991, respectively). In the remaining countries, women marry for the first time in their 20s. Since the 1980s, this mean age at marriage has increased in the majority of the countries, particularly in the Northern African countries as well as in Jordan, Kuwait and Myanmar where it has increased by 2 years or more. Worth noting is the case of Algeria where the mean age at marriage increased by 5 years between 1980 and 1992. This substantial delay in marriage, particularly to after 25, has certainly played an important role in the fast TFR decline of over 2 children per decade that Algeria experienced from 1979 to 1995 (see table 2). The impact of the increase in age at marriage in Northern African countries on fertility can be seen in the age pattern of fertility for those countries. As noted in the section above, whereas fertility declined most among the oldest age groups in other regions, in Northern Africa and Western Asia, fertility decline occurred mostly because of declines in fertility at the youngest ages.

b) Contraceptive use

The literature on fertility decline in the developing countries shows that past declines have occurred predominantly from increased contraceptive use. Table 6 presents data on contraceptive use among women of reproductive age who are in a marital or consensual union. Contraceptive use has generally reached a medium to high level in the countries with intermediate levels of fertility. In two-thirds of the 50 countries with available data, the percentage using any method of contraception is at least 50 per cent in the 1990s/2000 (table 7). In Brazil, Colombia, Costa Rica, the Islamic Republic of Iran and Viet Nam, contraceptive prevalence has even reached 70 per cent or over, a level comparable to that of more developed countries. It is worth noting that these five high prevalence countries all have a TFR below 3 children per woman. On the other hand, over half of the countries with a contraceptive prevalence below 50 per cent belong to the group of countries with the highest TFRs, that is, higher than or equal to 4.5 children per woman. Sudan, with a prevalence of 8.3 per cent in 1992/93 is at the lowest end of the scale in terms of contraceptive use. In the great majority of the countries considered here, modern methods of contraception account for over 75 per cent of contraceptive use. Only in Bolivia, Malaysia and Turkey do modern methods account for less than 60 per cent of contraceptive use.

The link between fertility decline and contraceptive use is further evidenced by the fact that in general, the higher the contraceptive prevalence reached in the 1990s/2000, the faster the fertility decline that occurred over the period 1970-2000 (table 8). All of the fast decline countries (with an annual TFR decline of 1.5 children per decade) have a contraceptive prevalence above 50 per cent, with the exception of Libyan Arab Jamahiriya and the United Arab Emirates. On the other hand, over half of the countries with an annual TFR decline of less than 1 child per decade have a contraceptive prevalence below 50 per cent. The exceptions to the latter are countries that already had a TFR of less than 5 children per woman in the early 1970s.

Countries that have reached high prevalence in contraceptive use and had done so within a short interval not surprisingly also recorded the fastest fertility declines (table 9). Out of the 36 countries for which recent trend data on contraceptive use are available, 7 have seen an annual increase in contraceptive use of at least 2 per cent—Algeria, the Islamic Republic of Iran, Jordan, Kyrgyzstan, Myanmar, Morocco and Viet Nam. Among the latter, only Kyrgyzstan and

Myanmar have experienced a rate of fertility decline of less than 1.5 children per decade and this is associated with the fact that these two countries already had a TFR of less than 5 children per woman in the early 1970s. The great majority (90 per cent) of the countries experiencing a recent increase in contraceptive use of less than 2 per cent annually had a relatively slow decline in fertility over the period 1970-2000. With the exception of Costa Rica and Malaysia, these countries all started the 1970s with a TFR of at least 5 children per woman. Moreover, the actual fertility level in the majority of these countries is still above 3 children per woman. These results suggest that a further and faster increase in contraceptive use has the potential of lowering fertility further in the majority of the countries with intermediate levels of fertility.

The last two columns of Table 6 present levels of unmet and met need for family planning in 28 countries with available data. Among the latter, the percentage of women with an unmet need for family planning⁷ varies from less than 10 per cent in Brazil, Colombia, El Salvador, Indonesia and Viet Nam to above 30 per cent in Haiti and Nepal. On the other hand, the percentage of women with met need for family planning⁸ varies from less than 50 per cent in Ghana, Haiti, Nepal and Sudan to over 90 per cent in Brazil, Colombia and Viet Nam. At the regional level, unmet need is highest in Africa (19 per cent) and lowest in Asia (15 per cent), on average. Not surprisingly, the percentage of women whose need for family planning is met is consequently lowest in Africa (around 60 per cent), highest in Asia (around 80 per cent) and around 75 per cent in Latin America and the Caribbean, on average. The countries with the lowest levels of unmet need (and the highest levels of met need) are all countries where contraceptive prevalence has reached very high levels (over 70 per cent). It might be difficult to expect a furthering of fertility decline through an increase in contraceptive use in those countries. However, the majority of the countries still have high levels of unmet need and among them, the countries with the highest levels of unmet need (and the lowest levels of met need) are all countries with a TFR of over 4 children per woman. These results again suggest that there is still room for increasing contraceptive use in the majority of the countries with intermediate levels of fertility, and that this further increase has the potential of decreasing fertility further and faster, particularly in the countries where fertility is still at a rather high level (above 4 children per woman).

A look at the differentials in the use of contraception reveals that among the 8 countries that have experienced the fastest fertility decline (a TFR decline of at least 1.5 children per decade)—Algeria, the Islamic Republic of Iran, Jordan, Morocco, Nicaragua, Viet Nam, Zimbabwe, and South Africa—women living in urban areas are still significantly more likely to use contraception than women living in rural areas. Similarly, more educated women are more likely to use contraception than women who are less educated or not educated at all. These differentials exist for both the use of any method of contraception and that of any modern method of contraception. These results suggest that in these countries, the possibility for increasing contraceptive use still exists (among rural and less educated women), increase which can in turn lead into further fertility decline. In fact, these contraceptive use differentials exist in all the countries with intermediate fertility levels, except in Costa Rica. The fertility of the latter was already below 5 in the early 1970s.

⁷ Women with an unmet need for family planning are those who would like to postpone or terminate childbearing but are not practicing contraception, that is, who are experiencing a gap between their fertility preferences and their contraceptive practice.

⁸ Women with a met need for family planning are the ones using contraception among those who need family planning.

C. EDUCATION AND URBANIZATION

a) *Education*

Over the past two decades, significant gains in the educational attainment of women have taken place in many countries. In 9 out of 20 countries shown in table 10, more than 50 per cent of women of reproductive age have attained at least secondary schooling. This shift to higher levels of educational attainment is also evident at the lower end, that is, among women with no education. There are 11 countries where less than 20 per cent of women of reproductive age have no education compared with 7 countries in the earlier period. However, not all countries have shown such gains in female education. In Bangladesh, Egypt, Guatemala, India, Morocco and Nepal, more than one-third of women of reproductive age have no education. In Bangladesh, India, Morocco and Nepal more than half have no education.

Numerous studies have shown convincingly the fertility-reducing impact of advances in female educational attainment, among them a United Nations study of 26 developing countries (United Nations, 1995). That study confirmed the negative relationship between female educational attainment and fertility. It demonstrated that the main paths of influence through which women's education reduces fertility were its association with later age at marriage, desire for smaller families and increased use of contraception. Education-specific trends in fertility were also examined in that study. By analysing data from two different surveys for each country, the study found that in many countries all educational groups participated in the decline of fertility. In many instances because fertility among the less educated declined most, the fertility gap between women with secondary education and those with little or no education narrowed. The findings from the United Nations study are further confirmed by analysis of recent survey data for the 1990s for the countries with intermediate levels of fertility.

Total fertility rates are lower among women who have attained at least secondary education than among those with no education in all 26 countries except in Indonesia and Trinidad and Tobago (table 11). Women with some education have at least one child fewer than women with no education and in most countries shown, women with secondary or higher education give birth, on average, to 1 to 4 births fewer than women with no education. In all countries, except Ghana, Guatemala and the Philippines, fertility declined in all education categories (see also figures 6, 7 and 8). In some countries the declines were greater among women with no education and in others, among women with secondary or higher education. Of the 16 countries with data for two points in time, in 9 (Egypt, Ghana, and Kenya in Africa; Brazil, Colombia, Dominican Republic, Guatemala and Peru in Latin America and the Caribbean) the gap between the TFR of those with secondary or higher education and that of those with no education narrowed over time. In 5 countries (Morocco in Africa; Bangladesh, India and the Philippines in Asia and Bolivia in Latin America and the Caribbean) the gap widened and in two, Indonesia and Turkey, there was no change.

Over a 10-15 year period, the nine countries where the gap narrowed, except for Guatemala, saw a substantial decline in the fertility of women with no education: declines ranging from 6 per cent per annum in the Dominican Republic to 19 per cent per annum in Brazil and Kenya. In the second group of countries the decline in fertility among women with secondary or higher education was larger than that experienced by women with no education. The decline in fertility among women who had attained at least secondary education ranged from 48 per cent per year in Morocco to 2.9 and 2.6 per cent in Bolivia and the Philippines respectively. It should be noted, however, that in Morocco, the majority of women (63.4 per cent) have no education and only 19.8 per cent have secondary or higher education. In Bolivia

and the Philippines, on the other hand, the majority of women have had education at least up to the secondary level. In the two large countries, Bangladesh and India, the TFR declined by 13.6 per cent and 18.9 per cent, respectively, among women with secondary or higher education whereas among women with no education, who constitute more than half of the women surveyed, the decline was just 8.3 per cent per annum.

From the above it is clear that while in most countries the education composition changed towards a more educated female population—whose fertility is invariably lower than that for women with no education—the faster pace of fertility decline among uneducated women than those with secondary or higher education in the majority of countries shown (9 out of 15), corroborates results of an earlier study mentioned above (United Nations, 1995). That study used decomposition-of-differences technique (which employs direct standardization) to disaggregate the overall change in fertility into three components: education, rates and interaction.⁹ The technique was applied to two countries in Africa: Kenya and Senegal, and five in Latin America and the Caribbean: Colombia, the Dominican Republic, Ecuador, Mexico and Peru. The time difference between the two surveys was about ten years starting around 1978. In all 7 countries, except Peru where a major portion of the fertility change (60 per cent) was attributed to changes in education composition, between 66-82 per cent of change in overall fertility could be attributed to changes in fertility within education groups. Thus, compositional changes, necessary as they may be in facilitating fertility decline, are not sufficient, for they explain a relatively small proportion of fertility decline. A large component of fertility decline is determined by changes within education categories.

b) Type of place of residence

To the extent that fertility transition is often viewed as a diffusion process that begins from urban areas and spreads to rural areas, compositional differences and changes can result in differentials in the timing and pace of fertility decline across societies or countries. Indeed, urban fertility has consistently been found to be lower than rural fertility (United Nations, 1987).

Estimates from the United Nations show a rapid increase of the world's urban population; the process of urbanization is advanced in the developed regions while in the developing regions, it is estimated that 40 per cent of the population lives in urban areas (United Nations, 2001). There is great diversity within the developing regions. Latin America and the Caribbean as a whole is highly urbanised with 75 per cent of its population living in cities in 2000. Asia and Africa are considerably less urbanized, with 37 per cent and 38 per cent, respectively of their populations living in urban areas. The process of urbanisation is expected to continue in all regions of the world. Given the strong differentials in total fertility according to residence these developments will have an impact on fertility trends. Data from Demographic and Health Surveys allow the study of fertility trends by residence in a comparative context. Table 10 shows the distribution of women according to the type of their place of residence at the time of the Demographic and Health Surveys. Except for Egypt, the proportion of women living in urban areas increased in all countries. The most rapid increase in urban-resident women occurred in Bolivia, Jordan, and Morocco, while the smallest increase was observed in Bangladesh, Dominican Republic, Ghana, Indonesia and Peru. In only 5 of the 20 countries (Bangladesh,

⁹ The "education" component is the amount fertility would have changed if education-specific fertility had remained constant and only the education composition had changed. The "rates" component is the amount fertility would have changed if the education composition had remained constant and education-specific fertility had changed as observed. Interaction is zero if education-specific rates changed by the same amount in every education group, while a large interaction term signals that the change across education groups was uneven.

India, Indonesia, Kenya and Nepal) is the proportion of women living in urban areas less than 30 per cent.

Recent data show total fertility rates that are lower among urban women by at least one child compared to rural women (table 11). The exception is Indonesia, where there is virtually no difference in the average number of births per woman between urban and rural women. Table 12 shows the trends in fertility decline by urban and rural residence for selected countries of Africa, Asia and Latin America and the Caribbean. Graphical presentations are shown in figures 6, 7 and 8. Although, as shown in table 11, fertility is invariably lower for urban women than rural women, the pace of decline did not follow the same pattern. Compared to women in rural areas, faster declines in fertility occurred among urban women in Bangladesh, Bolivia, Ghana, Morocco and the Philippines. On the other hand, for the most recent period, fertility declined faster among rural than urban women in Egypt, Indonesia, Kenya, Turkey and in all Latin American and Caribbean countries, excluding Bolivia but including Guatemala, the only country where fertility increased among urban women.

In Africa, urban-rural fertility differentials have widened over time in Ghana and Morocco narrowed in Egypt and remained unchanged in Kenya (figure 6). In Asia, the more rapid decline in urban fertility in Bangladesh and the Philippines has widened the gap between urban and rural fertility while the faster fertility decline among rural women in Turkey has narrowed it (figure 7). In Latin America and the Caribbean, the difference between urban and rural fertility has narrowed in all countries with trend data except Bolivia where it increased by more than one child per woman from around the mid-1980s to the mid-1990s, a result of declining urban fertility and unchanged rural fertility (figure 8). The narrowing gap between rural and urban fertility in Latin America and the Caribbean can be attributed to the faster decline in rural than urban fertility. Nonetheless, some of the widest urban-rural fertility gaps—of at least two children per woman—still persist in Bolivia, Guatemala, Haiti, Nicaragua and Peru in spite of the region's larger proportions of urban residents compared to other developing regions.

The data presented show that the pace of fertility decline derives less, or as much as, from compositional changes than from behavioural changes within each residential stratum, a finding consistent with that from a study of six Latin American and Caribbean countries in which only 15 per cent of marital fertility decline was attributable to compositional differences (Rodríguez, 1996). Thus, fertility decline is a function of not only the proportions of rural or urban residents but also of the differing urban and rural milieu, and compositional characteristics within each residential stratum with regard to socio-economic factors such as education, work status and income, and behavioural factors such as the age at marriage and contraceptive use.

D. CONCLUSIONS

This paper focused on 74 countries with intermediate levels fertility, that is, those countries whose total fertility rates is estimated to be between 5 and 2.1 births per woman during the period 1995-2000. For the past three decades, fertility has been declining in all countries. The pace of decline experienced by each country varied according to their level of fertility during the early 1970s. Countries at the upper end of the intermediate fertility range generally had a faster pace of decline than those at the lower end. Indeed, in several countries, fertility decline appears to have tapered off. Most of those countries have fertility rates of below 3 births per woman but there are others, such as Bangladesh, Egypt and even India, all large countries with total fertility rates between 3 and 3.5 births per woman, where declines in the recent past have been slow or non-existent. The patterns of change in age-specific fertility rates suggest that older

women contributed most to declines in fertility in countries with intermediate levels of fertility. The exceptions are countries in Northern Africa where increasing age at marriage appeared to be a major contributor to fertility decline

While there are a host of factors that affect levels of fertility and the speed of decline of fertility, this paper focused on a selected few: age patterns, marriage, contraceptive use, education and urbanization. There is strong evidence of rising age at marriage in the countries with intermediate levels of fertility, particularly in the Northern African and Western Asian regions. This has been associated with fertility declines at the youngest ages. Contraceptive use has been increasing and has reached a medium to high level in the great majority of the countries with at least 50 per cent of women of reproductive age who are in a union using contraception. Countries that reached a high prevalence in contraceptive use during the last decade are also the countries that recorded the fastest fertility declines over the period 1970-2000. Despite these high levels, the majority of the countries still have high levels of unmet need for contraception implying a potential for further fertility decline through increased contraceptive prevalence.

Both education and residence showed the expected strong relationship to level of fertility. Women with higher educational levels have fewer children than those poorly educated or with no education and urban women tend to have lower fertility than women from rural areas. However, within each education and residence category, variations in the pace of fertility decline were observed. In many countries faster declines in fertility occurred among women with no education than among those with secondary or higher education and among rural women compared with urban women. These trends occurred despite improvements in female educational attainment that altered the education composition of the population. These results indicate that fertility decline is less a function of compositional change than it is a function of behavioural changes among women in each education category or residential stratum, results which are consistent with findings in earlier studies.

Demographers have long sought indicators reflecting the socio-economic conditions that would trigger fertility declines in pre-transition countries and it was assumed that once fertility decline started it would continue unabated. Findings from this study suggest that strong family planning programs seem to have helped once the transition started, as witnessed by the declines in fertility among older women and by increasing contraceptive prevalence. Declines have occurred in all socio-economic groups and even in countries where development was lagging. The decline in fertility in settings devoid of significant socio-economic development and among deprived population groups as well as the stagnated pace of fertility decline in some countries point to the need to reassess previous assumptions regarding fertility transition. However, the central questions remain as to whether fertility in these countries will decline to replacement or below-replacement levels without further improvements in socio-economic conditions and as to whether the relatively low fertility can be sustained without these improvements.

REFERENCES

- Rodríguez, G. (1996). The spacing and limiting components of the fertility transition in Latin America. In José M. Guzmán and others, eds., *The Fertility Transition in Latin America*. Oxford: Clarendon Press.
- United Nations (1987). *Fertility Behaviour in the Context of Development: Evidence from the World Fertility Survey*. Population Studies, No. 100. New York. ST/ESA/SER.A/100.
- United Nations (1995). *Women's Education and Fertility Behaviour: Recent evidence from the Demographic and Health Surveys*. Sales No. E.95.XIII.23.
- United Nations (2001). *World Population Prospects: The 2000 Revision*. Volume I: Comprehensive Tables. New York. Sales No. E.01.XIII.8.
- United Nations (2001). *World Urbanization Prospects: The 1999 Revision*. New York. Sales No. E.01.XIII.11.

Table 1. Number of countries, population size and percentage distribution of population by fertility level

<i>Year</i>	<i>Total fertility rate (births per woman)</i>			<i>Total</i>
	<i>Greater than or equal to 5</i>	<i>Less than 5 and greater than 2.1</i>	<i>Less than or equal to 2.1</i>	
	<i>Number of countries</i>			
1970	106	61	20	187
1980	80	67	40	187
1990	58	74	55	187
2000	49	74	64	187
	<i>Population size (number in thousands)</i>			
1970	1588865	1427507	673272	3689643
1980	806155	2606368	1015763	4428286
1990	682908	2141955	2428283	5253146
2000	770757	2606062	2677944	6054764
	<i>Population size (percentage)</i>			
1970	43	39	18	100
1980	18	59	23	100
1990	13	41	46	100
2000	13	43	44	100

Source: United Nations (2001) World Population Prospects The 2000 Revision, Volume I: Comprehensive Tables. United Nations Publication (Sales No. E.01.XIII.8)

Table 2. Total fertility rates for countries with population size of 1 million or more and with total fertility between 2.1 and 5.0 births per woman

	<i>Around 1970</i>		<i>Around 1980</i>		<i>Around 1990</i>		<i>Around 1995</i>		<i>Around 2000</i>		<i>Average decline</i>
	<i>Year of</i>	<i>TFR</i>	<i>Year of</i>	<i>TFR</i>	<i>Year of</i>	<i>TFR</i>	<i>Year of</i>	<i>TFR</i>	<i>Year of</i>	<i>TFR</i>	<i>per year</i>
	<i>estimate</i>		<i>estimate</i>		<i>estimate</i>		<i>estimate</i>		<i>estimate</i>		<i>Earliest to most recent</i>
Africa											
Algeria.....	..	..	1979	7.0	1990	4.5	1995	3.5	..	..	0.22
Botswana.....	1971	6.5	1981	6.2	1991	5.3	..	..	..	..	0.06
Egypt.....	..	..	1980	5.3	1990	4.5	1995	3.7	1998	3.5	0.10
Ghana.....	1970	6.9	1978	6.3	1991	5.5	1996	4.5	..	..	0.09
Kenya.....	1969	7.6	1984	7.7	1991	5.6	1996	4.7	..	..	0.11
Lesotho.....	1975	5.8	1986	5.3	..	..	1996	4.9	..	..	0.04
Libyan A. J.....	1973	7.5	..	..	..	..	1993	4.1	..	..	0.17
Morocco.....	1973	7.4	1981	5.5	1992	3.3	1995	3.3	1999	3.0	0.17
South Africa.....	..	..	1986	4.4	..	..	1996	2.9	..	..	0.15
Sudan.....	1973	7.1	1988	5.0	1992	4.6	..	..	..	..	0.13
Tunisia.....	1970	6.1	1980	4.5	1990	3.3	1995	2.3	1999	2.1	0.14
Asia											
Bangladesh.....	1973	6.1	1983	4.9	1990	4.3	1994	3.4	1997	3.4	0.11
India.....	..	..	1979	4.7	1990	3.8	1995	3.5	1997	3.3	0.08
Indonesia.....	1973	5.2	1983	4.1	1989	3.1	1996	2.8	..	..	0.10
Iran (Islamic Rep. of).....	1975	6.4	1982	6.1	1991	5.0	1996	2.8	..	..	0.17
Israel.....	1970	4.0	1980	3.1	1990	3.0	1995	2.9	1997	2.9	0.04
Jordan.....	1974	7.6	1980	7.1	1988	5.9	1995	4.5	..	..	0.15
Kuwait.....	1970	6.8	1980	5.5	1987	3.7	1996	3.4	..	..	0.13
Kyrgyzstan.....	1969	4.9	1981	4.1	1992	3.6	1995	3.3	1998	2.8	0.07
Lebanon.....	..	..	1983	3.8	1988	3.1	1993	2.5	..	..	0.13
Malaysia.....	1970	4.7	1980	3.9	1990	3.3	1995	3.3	1998	3.3	0.05
Mongolia.....	1973	7.5	1983	5.5	1990	4.2	1996	3.1	..	..	0.19
Myanmar.....	1973	5.7	1983	4.7	1988	3.5	1994	2.9	..	..	0.13
Nepal.....	1974	6.0	1983	5.6	1991	5.1	1994	4.8	2000	4.1	0.07
Philippines.....	1971	6.0	1981	5.1	1991	4.1	1996	3.8	..	..	0.09
Syrian Arab Rep.....	1970	7.7	..	..	1991	4.7	..	..	..	..	0.14
Tajikistan.....	1975	6.3	1980	5.7	1990	5.1	1993	4.2	..	..	0.12
Turkey.....	1970	5.7	1980	4.4	1990	3.0	1995	2.6	1998	2.4	0.12
Turkmenistan.....	1970	6.0	1982	4.8	1990	4.2	..	..	..	..	0.09
United Arab Emirates.....	..	..	1987	5.9	1993	5.0	..	..	..	..	0.15
Uzbekistan.....	1970	5.7	1982	4.7	1990	4.1	..	..	1999	2.8	0.10
Viet Nam.....	..	..	1985	4.8	1991	3.2	1996	2.3	..	..	0.23
Latin America and the Caribbean											
Argentina.....	1970	3.2	1980	3.4	1990	2.9	1995	2.6	1997	2.6	0.02
Bolivia.....	1973	6.5	..	..	1987	5.1	1992	5.0	1996	4.4	0.09
Brazil.....	1970	5.8	1980	3.9	..	..	1994	2.6	..	..	0.13
Chile.....	1970	3.3	1980	2.5	1990	2.5	1995	2.4	..	..	0.04
Colombia.....	1968	6.0	1980	3.6	1988	2.9	1993	3.0	1998	2.6	0.11
Costa Rica.....	1970	4.3	1980	3.7	1990	3.2	1995	2.8	1998	2.6	0.06
Dominican Rep.....	1973	5.7	1983	4.1	1989	3.3	1994	3.2	..	..	0.12
Ecuador.....	..	..	1982	5.0	1992	3.6	1997	3.3	..	..	0.11
El Salvador.....	1970	6.6	1979	5.6	1991	3.8	1996	3.6	..	..	0.12
Guatemala.....	..	..	1978	6.1	..	..	1993	5.1	1997	5.1	0.05
Haiti.....	1973	5.1	1983	5.9	1992	5.0	..	..	1998	4.7	0.02

	<i>Around 1970</i>		<i>Around 1980</i>		<i>Around 1990</i>		<i>Around 1995</i>		<i>Around 2000</i>		<i>Average decline per year Earliest to most recent</i>
	<i>Year of estimate</i>	<i>TFR</i>	<i>Year of estimate</i>	<i>TFR</i>	<i>Year of estimate</i>	<i>TFR</i>	<i>Year of estimate</i>	<i>TFR</i>	<i>Year of estimate</i>	<i>TFR</i>	
Honduras.....	1972	7.5	1981	6.5	1987	5.6	1994	4.9	..	..	0.12
Jamaica.....	1970	5.5	1982	3.5	1990	3.0	1996	2.9	..	..	0.10
Mexico.....	1974	6.2	1982	4.3	1989	3.5	1995	3.3	..	..	0.14
Nicaragua.....	..	..	1978	6.5	1990	4.6	1995	3.9	..	..	0.15
Panama.....	1970	5.0	1980	3.6	1990	2.8	1995	2.6	..	..	0.10
Paraguay.....	..	..	1977	5.0	1989	4.8	1997	4.3	..	..	0.04
Peru.....	1968	6.8	1980	4.7	1990	3.8	1995	3.7	1998	3.0	0.13
Uruguay.....	1970	3.0	1980	2.7	1990	2.3	1995	2.3	..	..	0.03
Venezuela.....	1970	5.7	1980	4.4	1990	3.6	1995	3.1	1998	2.9	0.10
<i>Oceania</i>											
Papua New Guinea.	..	..	1980	6.0	..	..	1994	4.8	..	..	0.09

Source: United Nations Population Division Database on fertility 2001

Note: .. Data are not available

Table 3. Percentage of total fertility contributed by ages 15-24, 25-34 and 35 years and over, selected regions

<i>Region</i>	<i>Average date of estimate</i>	<i>Percentage of total fertility contributed by ages</i>		
		<i>15-24</i>	<i>25-34</i>	<i>35+</i>
Northern Africa and Western Asia.....	1975	30.4	46.3	23.3
	1994	25.5	49.3	25.2
Sub-Saharan Africa.....	1970	30.1	41.3	28.6
	1992	34.2	41.8	24.0
South-central and South-eastern Asia.....	1975	30.1	45.0	24.8
	1994	37.7	46.8	15.7
Latin America and the Caribbean.....	1976	35.1	43.7	21.3
	1995	40.8	42.3	17.0

Source: United Nations Population Division Database on fertility, 2001

Table 4. Trends in proportion ever married among women aged 15-19 and 20-24

<i>Region and country</i>	<i>Former</i>	<i>Ever married (%)</i>		<i>Later</i>	<i>Ever married (%)</i>	
	<i>year</i>	<i>among women aged</i>		<i>year</i>	<i>among women aged</i>	
		<i>15-19</i>	<i>20-24</i>		<i>15-19</i>	<i>20-24</i>
Northern Africa and Western Asia						
Algeria	1977	23.6	69.0	1992	5.4	29.6
Egypt	1986	20.7	60.6	1996	14.5	56.1
Israel	1972	8.7	54.3	1983	6.8	49.3
Jordan	1979	20.5	64.4	1997	8.2	38.8
Kuwait	1989	14.4	54.8	1996	5.4	42.0
Libyan Arab Jamahiriya	1984	9.1	49.9	1995	1.0	12.2
Morocco	1982	18.5	59.6	1995	10.5	39.8
Sudan	1983	28.8	69.5	1990	15.9	45.8
Syrian Arab Republic	1970	27.7	70.2	1981	24.9	64.1
Tunisia	1984	6.7	41.0	1994	3.0	27.7
Turkey	1980	21.0	72.7	1998	15.5	60.7
United Arab Emirates	1987	56.5	87.8	1995	8.2	41.7
Sub-Saharan Africa						
Botswana	1981	7.3	31.2	1991	5.4	27.2
Ghana	1979	30.9	84.6	1998/99	16.4	71.0
Kenya	1989	18.8	64.7	1998	16.7	65.1
Lesotho	1976	29.4	79.6	1986	18.1	70.4
South Africa	1980	5.6	35.8	1991	4.5	28.7
South-central Asia						
Bangladesh	1981	68.7	94.9	1999/00	48.1	81.5
India	1981	44.1	86.0	1998/99	33.6	78.8
Iran (Islamic Republic of)	1986	34.2	74.2	1994	22.4	64.9
Nepal	1981	50.8	86.9	1996	44.0	85.2
Tajikistan	1979	..	79.6	1989	11.6	76.9
Turkmenistan	1979	..	68.3	1989	6.4	53.3
Uzbekistan	1989	15.3	74.1	1996	13.0	77.2
South-eastern Asia						
Indonesia	1980	30.1	77.7	1997	18.0	63.9
Malaysia	1980	10.3	48.7	1994	7.6	39.8
Myanmar	1983	16.8	57.9	1997	6.6	34.8
Philippines	1980	14.1	54.5	1998	8.5	43.7
Viet Nam	1989	11.4	57.5	1997	7.7	53.1
Caribbean						
Dominican Republic	..	..	..	1996	28.9	66.1
Haiti	..	..	..	2000	19.4	57.3
Jamaica	..	..	..	1997	30.6	70.9
Central America						
Costa Rica	..	..	..	1992/93	17.1	62.2
El Salvador	..	..	..	1998	26.2	60.5
Guatemala	..	..	..	1998/99	26.1	69.5

Table 4. Trends in proportion ever married among women aged 15-19 and 20-24

<i>Region and country</i>	<i>Former</i>	<i>Ever married (%)</i>		<i>Later</i>	<i>Ever married (%)</i>	
	<i>year</i>	<i>15-19</i>	<i>20-24</i>	<i>year</i>	<i>15-19</i>	<i>20-24</i>
Honduras	1996	30.4	68.2
Mexico	1990	15.4	54.2
Nicaragua	1998	34.3	75.1
Panama	1990	21.4	55.9
South America						
Argentina	1991	12.4	45.2
Bolivia	1998	12.2	53.4
Brazil	1996	16.8	52.6
Chile	1992	11.7	43.8
Colombia	2000	17.6	50.1
Ecuador	1999	19.2	56.2
Paraguay	1996	18.4	62.7
Peru	1996	12.5	52.3
Uruguay	1996	12.8	44.8
Venezuela	1990	17.7	50.6
Oceania						
Papua New Guinea	1996	20.8	75.1

Source: Various national survey reports.

NOTES: Two dots (..) mean that the data are not available.

^a Marriage here refers to recognised marital and consensual unions.

Table 5. Trends in singulate mean age at marriage^a (SMAM) among women

<i>Region and country</i>	<i>Former year</i>	<i>SMAM</i>	<i>Later year</i>	<i>SMAM</i>	<i>Change in SMAM</i>
Eastern Africa					
Kenya	1989	21.7	1998	21.7	0.0
Northern Africa					
Algeria	1980	20.8	1992	25.9	5.1
Egypt	1986	21.6	1996	22.3	0.7
Libyan Arab Jamahiriya	1973	18.7	1984	23.0	4.3
Morocco	1982	22.2	1994	25.3	3.1
Sudan	1983	20.7	1993	22.7	2.0
Tunisia	1984	24.3	1994	26.6	2.3
Southern Africa					
Botswana	1981	26.4	1991	26.9	0.5
Lesotho	1976	20.1	1986	21.3	1.2
South Africa	1980	25.7	1991	26.8	1.1
Western Africa					
Ghana	1979	20.5	1993	22.4	1.9
Eastern Asia					
Mongolia	..	..	1998	22.5	..
South-central Asia					
Bangladesh	1981	16.7	1989	18.1	1.4
India	1981	18.7	1991	19.3	0.6
Iran (Islamic Republic of)	1986	20.2	1994	21.7	1.5
Kyrgyzstan	1985	..	1997	20.4	..
Nepal	1981	17.9	1991	18.5	0.6
Tajikistan	1979	..	1989	20.9	..
Turkmenistan	1979	..	1989	22.6	..
Uzbekistan	1989	21.0	1996	20.6	-0.4
South-eastern Asia					
Indonesia	1980	20.0	1990	21.6	1.6
Malaysia (Peninsular)	1984	24.5	1994	24.9	0.4
Myanmar	1991	24.5	1997	26.4	1.9
Philippines	1980	22.4	1995	24.1	1.7
Viet Nam	1989	23.1	1997	22.1	-1.0
Western Asia					
Israel	1972	22.8	1983	23.5	0.7
Jordan	1979	21.5	1997	25.3	3.8
Kuwait	1989	23.0	1996	25.3	2.3
Lebanon	1970	23.2	..	..	..
Syrian Arab Republic	1970	20.7	1981	21.5	0.8
Turkey	1980	20.7	1990	22.0	1.3

Table 5. Trends in singulate mean age at marriage^a (SMAM) among women

<i>Region and country</i>	<i>Former year</i>	<i>SMAM</i>	<i>Later year</i>	<i>SMAM</i>	<i>Change in SMAM</i>
United Arab Emirates	1987	23.1	1995	24.3	1.2
Caribbean					
Dominican Republic	1986	21.5	1996	21.3	-0.2
Haiti	1988	23.8	1994	22.1	-1.7
Jamaica	1982	32.2	1991	33.2	1.0
Central America					
Costa Rica	1973	21.7	1984	22.2	0.5
El Salvador	1992	22.3	1998	21.6	-0.7
Guatemala	1987	..	1998	20.5	..
Honduras	1988	20.9	1996	20.4	-0.5
Mexico	1980	21.6	1990	22.4	0.8
Nicaragua	1992	19.8	1998	20.0	0.2
Panama	1980	21.4	1990	21.9	0.5
South America					
Argentina	1991	23.3	..	..	..
Bolivia	1988	22.8	1998	22.8	0.0
Brazil	1980	22.7	1997	22.8	0.1
Chile	1982	23.6	1992	23.4	-0.2
Colombia	1985	22.7	1993	22.5	-0.2
Ecuador	1982	21.4	1990	22.0	0.6
Paraguay	1982	21.8	1992	21.5	-0.3
Peru	1981	22.8	1996	23.1	0.3
Uruguay	1985	22.9	1996	23.3	0.4
Venezuela	1981	21.3	1990	22.1	0.8
Oceania					
Papua New Guinea	1980	20.6	1996	20.8	0.2

Source: United Nations Database on Marriage Patterns.

NOTES: Two dots (..) mean that the data are not available.

^a Marriage here refers to recognised marital and consensual unions.

Table 6. Levels and trends of contraceptive use among women of reproductive age who are in a marital or consensual union; need for family planning

Region and country	Year	Contraceptive use				Unmet need for family planning	
		Latest Prevalence (%)		Trends 1990-2000 (annual % change)		% unmet need	% met need
		any method	mod. method	any method	mod. method		
Eastern Africa							
Kenya	1998	39.0	31.5	1.3	1.3	23.9	63.1
Northern Africa							
Algeria	1995	56.9	49.4	2.0	2.2	..	..
Egypt	2000	56.1	53.9	1.5	1.4	11.2	83.6
Libyan Arab Jamahiriya	1995	39.7	25.6	..	..	..	..
Morocco	1995	50.3	42.4	2.6	2.1	16.1	76.8
Sudan	1992/93	8.3	6.9	0.0	0.2	26.0 a	23.5 a
Tunisia	1994	60.0	51.0	1.7	1.8	..	..
Southern Africa							
Botswana	1988	33.0	31.7	..	..	..	..
Lesotho	1991/92	23.2	18.9	..	..	..	..
South Africa	1998	56.3	55.1	0.7	0.7	..	..
Western Africa							
Ghana	1998/99	22.0	13.3	0.6	0.7	23.0	48.9
Eastern Asia							
Mongolia	1998	59.9	45.7	..	..	..	..
South-central Asia							
Bangladesh	1999/00	53.8	43.4	1.8	1.6	15.3	78.3
India	1998/99	48.2	42.8	1.3	0.1	15.8	75.3
Iran (Islamic Rep. of)	1997	72.9	56.0	2.4	3.0	..	..
Kyrgyzstan	1997	59.5	48.9	..	..	11.6	83.7
Nepal	2001	39.3	35.4	1.7	1.4	31.4 b	47.6 b
Tajikistan	..	..	..	..	..	..	..
Turkmenistan	2000	61.8	53.1	..	..	..	..
Uzbekistan	1996	55.6	51.3	..	..	13.7	80.2
South-eastern Asia							
Indonesia	1997	57.4	54.7	1.1	1.1	9.2	86.4
Malaysia	1994	54.5	29.8	1.0	-0.3	..	..
Myanmar	1997	32.7	28.4	3.2	3.0	..	..
Philippines	1998	46.0	28.2	1.2	0.7	19.8	71.5
Viet Nam	1997	75.3	55.8	2.9	3.0	6.9	91.6
Western Asia							
Israel (Jewish pop.)	1987/88	68.0	52.0	..	..	..	..
Jordan	1997	52.6	37.7	2.5	1.5	14.2	80.1
Kuwait	1996	50.2	40.9	1.0	1.1	..	..

Table 6. Levels and trends of contraceptive use among women of reproductive age who are in a marital or consensual union; need for family planning

Region and country	Year	Contraceptive use				Unmet need for family planning	
		Latest Prevalence (%)		Trends 1990-2000 (annual % change)		% unmet need	% met need
		any method	mod. method	any method	mod. method		
Lebanon	1996	61.0	37.0	..	..	..	..
Syrian Arab Republic	1993	36.1	28.3	..	..	..	..
Turkey	1998	63.9	37.7	0.1	0.7	10.1	86.6
United Arab Emirates	1995	27.5	23.6	..	..	..	..
Caribbean							
Dominican Republic	1996	63.7	59.2	1.4	1.5	12.5	83.9
Haiti	2000	28.1	22.3	1.7	1.2	39.8	41.4
Jamaica	1997	65.9	62.6	1.2	1.3	..	..
Central America							
Costa Rica	1992/93	75.0	64.6	0.8	0.9	..	..
El Salvador	1998	59.7	54.1	1.3	1.1	8.2	..
Guatemala	1998/99	38.2	30.9	1.4	1.0	23.1	62.9
Honduras	1996	50.0	41.0	0.9	1.3	18.0	..
Mexico	1995	66.5	57.5	1.7	1.6	..	..
Nicaragua	1998	60.3	57.4	1.9	2.1	14.7	80.8
Panama	1984	58.2	54.2	..	..	..	..
South America							
Argentina	..	..	..	..	..	..	..
Bolivia	1998	48.3	25.2	1.7	1.6	26.1	64.9
Brazil	1996	76.7	70.3	1.1	1.4	7.3	91.5
Chile	..	..	..	..	..	..	..
Colombia	2000	76.9	64.0	1.1	0.9	6.2	92.8
Ecuador	1999	65.8	51.5	1.4	0.9	10.0	..
Paraguay	1998	57.4	47.7	1.8	1.7	17.3	..
Peru	1996	64.2	41.3	1.5	2.0	12.1	85.1
Uruguay	..	..	..	..	..	..	..
Venezuela	1977	49.3	37.7	..	..	..	..
Oceania							
Papua New Guinea	1996	25.9	19.6	..	..	..	..

Source: United Nations Population Division Database on Contraceptive Use.

NOTES: Two dots (..) mean that the data are not available.

^a Data pertain to the year 1990.

^b Data pertain to the year 1996.

Table 7. Distribution of countries by contraceptive prevalence,^a 1990-2000

<i>Contraceptive prevalence</i>						
<i>Less than 10 %</i>	<i>20 to < 30 %</i>	<i>30 to < 40 %</i>	<i>40 to < 50 %</i>	<i>50 to < 60 %</i>	<i>60 to < 70 %</i>	<i>70 % or more</i>
Sudan	Ghana Haiti Lesotho Papua New Guinea United Arab Emirates	Botswana Guatemala Kenya Libyan A. J. Myanmar Nepal Syrian Arab Rep.	Bolivia India Philippines Venezuela	Algeria Bangladesh Egypt El Salvador Honduras Indonesia Jordan Kuwait Malaysia Morocco Panama Paraguay South Africa Uzbekistan	Dominican Rep. Ecuador Israel Jamaica Kyrgyzstan Lebanon Mexico Mongolia Nicaragua Peru Tunisia Turkey Turkmenistan	Brazil Colombia Costa Rica Iran, Islamic Rep. of Viet Nam

Source: Table 3.

^a Percentage using contraception among women of reproductive age who are in a marital or consensual union.

Table 8. Distribution of countries by annual decrease in total fertility rate and contraceptive prevalence^a

<i>Contraceptive Prevalence</i>	<i>Average decrease in TFR over the period 1970-2000 (number of children per decade)</i>			
	<i>2 or more</i>	<i>1.5 to 1.9</i>	<i>1.0 to 1.4</i>	<i>< 1.0</i>
Less than 50 per cent.....		Libyan Arab Jamahiriya United Arab Emirates	Kenya Myanmar Sudan Syrian Arab Rep.	Bolivia Botswana Ghana Guatemala Haiti India Lesotho Nepal Papua New Guinea Philippines
50 per cent or more.....	Algeria Viet Nam	Iran (Islamic Rep. of) Jordan Mongolia Morocco Nicaragua South Africa	Bangladesh Brazil Colombia Dominican Rep. Ecuador Egypt El Salvador Honduras Indonesia Jamaica Kuwait Lebanon Mexico Panama Peru Tunisia Turkey Uzbekistan Venezuela	Argentina Chile Costa Rica Israel Kyrgyzstan Malaysia Paraguay Turkmenistan

Sources: Table 3 and Table 2.

^a Percentage using contraception among women of reproductive age who are in a marital or consensual union.

Table 9. Distribution of countries by annual decrease in total fertility rate and recent trends in contraceptive prevalence^a

<i>Trends in contraceptive prevalence</i> (Annual % change, 1990-2000)	<i>Average decrease in TFR over the period 1970-2000 (number of children per decade)</i>			
	<i>2 or more</i>	<i>1.5 to 1.9</i>	<i>1.0 to 1.4</i>	<i>< 1.0</i>
2 per cent or over	Algeria Viet Nam	Iran (Islamic Rep. of) Jordan Morocco	Myanmar	Kyrgyzstan
1.5 to < 2 per cent		Nicaragua	Bangladesh Egypt Mexico Peru Tunisia	Bolivia Haiti Nepal Paraguay
1.0 to < 1.5 per cent			Brazil Colombia Dom. Rep. El Salvador Indonesia Jamaica Kenya Kuwait	Guatemala India Malaysia Philippines
Less than 1 per cent		South Africa	Honduras Sudan Turkey	Costa Rica Ghana

Source: Table 3 and Table 2.

^a Percentage using contraception among women of reproductive age who are in a marital or consensual union.

Table 10. Percentage distribution of female respondents by educational level, selected countries

<i>Region and Country</i>	<i>Year of Survey</i>	<i>Highest educational level</i>			<i>Residence</i>	
		<i>No education</i>	<i>Primary</i>	<i>Secondary/higher</i>	<i>Urban</i>	<i>Rural</i>
Africa						
Egypt.....	1988	50.8	31.8	17.4	48.3	51.7
Egypt.....	2000	43.2	29.7	37.0	44.1	55.9
Ghana.....	1988	39.7	52.8	7.5	33.9	66.1
Ghana.....	1998	29.1	18.0	52.8	35.9	64.1
Kenya.....	1989	25.1	54.4	20.4	17.3	82.7
Kenya.....	1998	11.5	59.3	29.2	23.2	76.8
Morocco.....	1987	82.7	10.0	7.1	42.7	57.3
Morocco.....	1992	63.4	16.9	19.8	49.2	50.8
Asia						
Bangladesh.....	1993-94	58.2	26.8	15.0	11.5	88.5
Bangladesh.....	1996-97	54.8	27.0	18.2	11.7	88.3
India.....	1993	61.5	16.3	21.9	26.2	73.8
India.....	1999	53.5	16.9	29.6	26.2	73.8
Indonesia.....	1987	23.2	60.0	16.8	27.5	72.5
Indonesia.....	1997	13.2	58.7	28.1	27.9	72.1
Jordan.....	1990	23.5	22.5	54.0	73.8	26.2
Jordan.....	1997	9.1	15.3	75.6	83.6	16.4
Nepal.....	1996	80.0	11.0	9.0	8.4	91.6
Nepal.....	2001	74.0	12.8	13.2	9.6	90.4
Philippines.....	1993	2.1	31.2	66.6	56.6	43.4
Philippines.....	1998	1.5	26.2	72.2	56.6	43.4
Turkey.....	1993	27.1	55.4	17.5	64.1	35.9
Turkey.....	1998	16.7	53.0	30.3	66.5	33.5
Latin America and Caribbean						
Bolivia.....	1989	17.4	41.5	41.1	60.0	40.0
Bolivia.....	1998	8.1	34.3	57.5	71.5	28.5
Brazil.....	1986	7.4	66.5	26.0	75.6	24.4
Brazil.....	1996	5.2	32.9	61.9	82.0	18.0
Colombia.....	1986	5.7	48.8	45.4	72.0	28.0
Colombia.....	2000	3.3	31.8	64.9	77.4	22.6
Dominican Rep.....	1986	4.8	61.9	33.3	65.5	34.5
Dominican Rep.....	1996	7.0	49.4	43.6	66.6	33.4
Ecuador.....	1987	7.8	47.5	44.7	59.2	40.8
Ecuador.....	1999	4.1	39.2	56.4	65.2	34.8
Guatemala.....	1987	38.4	47.1	14.6	37.2	62.8
Guatemala.....	1998-99	25.3	49.3	25.4	45.0	55.0
Haiti.....	1994-95	35.6	41.6	22.8	43.9	56.1
Haiti.....	2000	24.6	47.3	28.1	45.9	54.1
Peru.....	1986	10.9	38.0	51.0	68.1	31.9
Peru.....	2000	5.1	28.6	66.3	69.9	30.1

Source: Demographic and Health Surveys

Table 11. Total fertility rates by educational level and place of residence, selected countries

Region and Country	Year of Survey						TFR Difference		
		Highest educational level			Residence		Primary minus	Secondary+ minus	Urban minus
		No education	Primary	Secondary+	Urban	Rural	No education	No education	Rural
Africa									
Egypt.....	1992	6.0	5.4	4.5	4.5	6.2	-0.6	-1.5	-1.6
Egypt.....	1995	5.4	4.8	4.4	4.4	5.4	-0.7	-1.0	-1.0
Ghana.....	1988	6.9	6.1	3.5	5.2	6.9	-0.8	-3.4	-1.7
Ghana.....	1993	3.5	3.1	1.7	2.3	3.6	-0.4	-1.8	-1.4
Ghana.....	1998	5.8	4.9	3.6	3.0	5.4	-0.9	-2.3	-2.4
Kenya.....	1989	7.3	7.1	5.0	4.8	7.1	-0.2	-2.2	-2.3
Kenya.....	1993	6.1	5.9	4.1	3.4	6.0	-0.2	-2.0	-2.6
Kenya.....	1998	5.5	5.1	3.5	3.1	5.2	-0.4	-2.0	-2.2
Morocco.....	1987	6.7	5.2	4.5	5.0	7.4	-1.5	-2.2	-2.4
Morocco.....	1992	5.1	2.6	2.0	2.8	5.7	-2.5	-3.1	-2.9
Sudan.....	1990	7.1	6.7	5.6	6.2	7.2	-0.4	-1.5	-1.0
Tunisia.....	1988	7.3	5.7	4.5	5.3	7.9	-1.7	-2.9	-2.5
Asia									
Bangladesh.....	1993-94	4.6	4.3	3.3	3.6	4.4	-0.3	-1.2	-0.8
Bangladesh.....	1996-97	4.3	3.8	2.9	2.9	4.1	-0.6	-1.4	-1.2
India.....	1993	3.6	2.9	2.6	2.9	3.4	-0.7	-1.0	-0.5
India.....	1993	4.4	3.5	3.1	3.5	4.2	-0.9	-1.3	-0.7
India.....	1999	3.5	2.6	2.0	2.3	3.1	-0.9	-1.5	-0.8
Indonesia.....	1987	4.3	4.3	4.0	4.2	4.3	0.0	-0.3	-0.1
Indonesia.....	1991	3.9	3.9	3.7	3.8	3.9	0.0	-0.2	-0.1
Indonesia.....	1994	3.7	3.8	3.8	3.5	3.8	0.1	0.1	-0.3
Indonesia.....	1997	3.5	3.6	3.7	3.6	3.7	0.1	0.3	-0.1
Kyrgyzstan.....	1997	..	4.3	3.5	2.5	4.0	..	..	-1.6
Nepal.....	1996	5.5	4.4	3.5	3.7	5.4	-1.0	-2.0	-1.7
Philippines.....	1993	5.2	5.5	3.5	3.5	4.9	0.3	-1.7	-1.4
Philippines.....	1998	5.2	5.1	3.3	3.1	4.7	-0.1	-1.9	-1.7
Turkey.....	1993	5.1	3.2	2.8	3.3	4.1	-1.9	-2.3	-0.8
Turkey.....	1998	4.2	2.7	1.8	2.4	3.1	-1.5	-2.3	-0.7
Uzbekistan.....	1996	1.4	..	3.6	2.9	4.1	..	2.2	-1.1
Latin America and Caribbean									
Bolivia.....	1989	6.3	6.0	3.3	4.0	6.6	-0.3	-3.0	-2.6
Bolivia.....	1998	7.1	5.8	3.0	3.4	6.7	-1.3	-4.1	-3.3
Brazil.....	1986	6.7	3.9	2.2	3.2	5.4	-2.8	-4.5	-2.2
Brazil.....	1996	4.8	3.4	2.1	2.3	3.6	-1.5	-2.7	-1.3
Colombia.....	1986	5.4	4.2	2.4	2.8	5.0	-1.2	-3.0	-2.2
Colombia.....	1990	5.0	3.6	2.2	2.5	3.9	-1.4	-2.8	-1.4
Colombia.....	1995	5.2	3.9	2.4	2.5	4.4	-1.3	-2.8	-1.9
Colombia.....	2000	4.1	3.6	2.2	2.3	3.8	-0.5	-1.9	-1.4
Dominican Rep.....	1986	5.6	4.5	2.7	3.2	5.1	-1.1	-2.9	-1.9

Table 11. Total fertility rates by educational level and place of residence, selected countries

Region and Country	Year of Survey	Highest educational level					TFR Difference		
		Residence			Primary minus	Secondary+ minus	Urban minus		
		No education	Primary	Secondary+	Urban	Rural	No education	No education	Rural
Dominican Rep.....	1991	5.3	3.8	2.7	2.8	4.4	-1.6	-2.6	-1.6
Dominican Rep.....	1996	5.0	3.8	2.6	2.8	4.1	-1.2	-2.4	-1.3
Ecuador.....	1987	6.5	5.3	2.9	3.5	5.6	-1.2	-3.6	-2.0
Guatemala.....	1987	7.1	5.2	2.7	4.1	6.6	-1.9	-4.4	-2.5
Guatemala.....	1995	7.1	5.1	2.7	3.9	6.2	-1.9	-4.3	-2.3
Guatemala.....	1998-99	7.1	5.2	3.0	4.2	6.0	-1.9	-4.1	-1.8
Haiti.....	1994-95	6.3	5.0	2.7	3.5	6.1	-1.3	-3.7	-2.6
Nicaragua.....	1997-98	6.1	4.6	2.5	3.1	5.4	-1.5	-3.6	-2.3
Paraguay.....	1990	6.8	5.6	3.3	3.7	6.3	-1.3	-3.5	-2.6
Peru.....	1986	7.5	5.4	2.9	3.3	6.9	-2.0	-4.6	-3.6
Peru.....	1992	7.3	5.4	2.7	3.0	6.5	-1.9	-4.6	-3.6
Peru.....	1996	6.9	5.2	2.8	3.0	5.8	-1.7	-4.1	-2.8
Peru.....	2000	5.5	4.4	2.3	2.4	4.7	-1.2	-3.2	-2.3

Source: Demographic and Health Surveys

Table 12. Annual percentage decline in total fertility rates by educational level and place of residence, selected countries

Region and Country	Period of survey		Highest educational level			Residence		All women aged 15-49
	Earlier	Later	No education	Primary	Secondary/higher	Urban	Rural	
Africa								
Egypt.....	1992	1995	-18.0	-19.8	- 3.5	- 4.6	-25.9	-16.3
Ghana.....	1988	1998	-11.1	-11.7	0.4	-22.0	-14.5	-17.4
Kenya.....	1989	1998	-19.2	-21.4	-16.6	-19.8	-20.9	-22.3
Morocco.....	1987	1992	-31.7	-51.9	-48.4	-45.1	-34.2	-42.7
Asia								
Bangladesh.....	1994	1997	- 8.3	-17.9	-13.6	-23.5	-12.3	-13.6
India.....	1993	1999	-14.9	-15.5	-18.9	-20.5	-18.0	-18.8
Indonesia.....	1987	1997	- 8.3	- 7.2	- 2.4	- 6.1	- 6.2	- 6.1
Philippines.....	1993	1998	0.9	- 7.0	- 2.6	- 9.4	- 3.1	- 6.7
Turkey.....	1993	1998	-18.1	-10.5	-19.2	-17.5	-18.7	-18.4
Latin America and Caribbean								
Bolivia.....	1989	1998	9.4	- 2.1	- 2.9	- 6.7	1.1	- 7.6
Brazil.....	1986	1996	-19.0	- 5.5	- 1.4	- 8.3	-17.9	-11.4
Colombia.....	1986	2000	- 9.0	- 4.1	- 1.1	- 3.1	- 8.6	- 5.2
Dominican Rep.....	1986	1996	- 6.2	- 6.8	- 1.1	- 3.7	- 9.7	- 5.9
Guatemala.....	1995	1999	1.2	1.8	6.7	8.4	- 5.0	- 0.1
Peru.....	1986	2000	-13.8	- 7.6	- 4.1	- 6.8	-16.2	-10.3

Source: Demographic and Health Surveys

Figure 1. Change in TFR per year according to level at beginning of period (1970s)

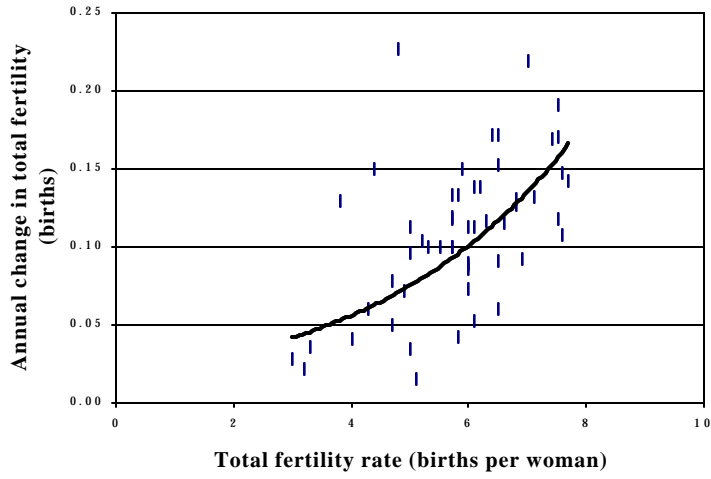


Figure 2. TFR and average annual change in total fertility: Nepal and Turkey

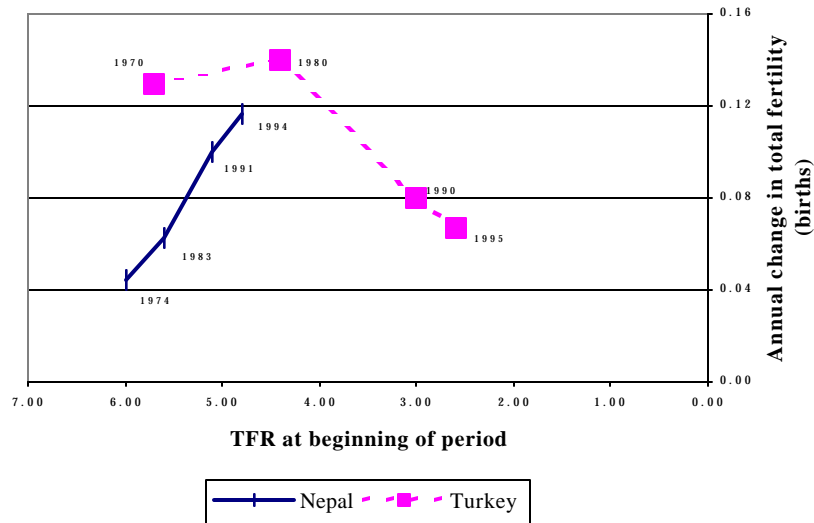


Figure 3. Age-specific fertility rates, selected regions

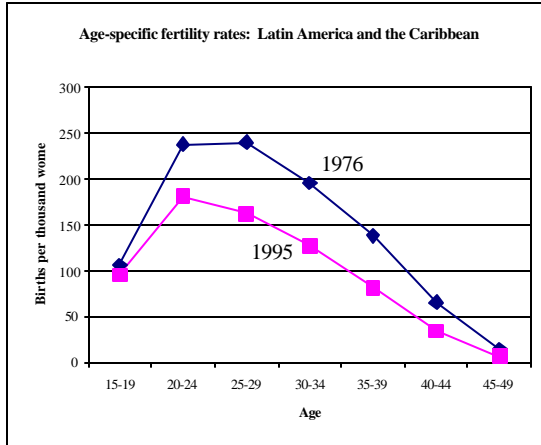
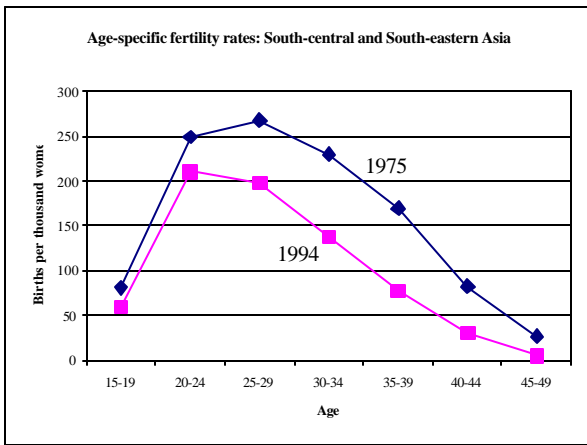
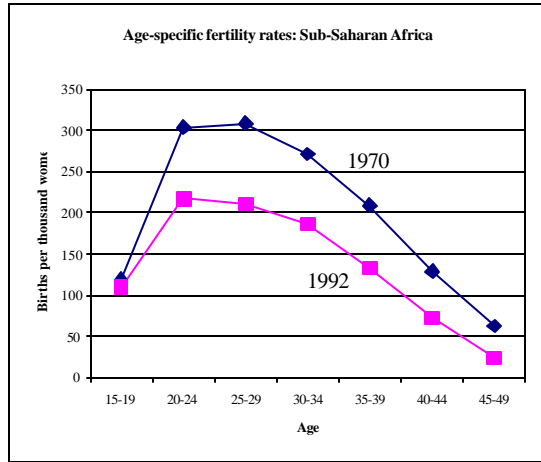
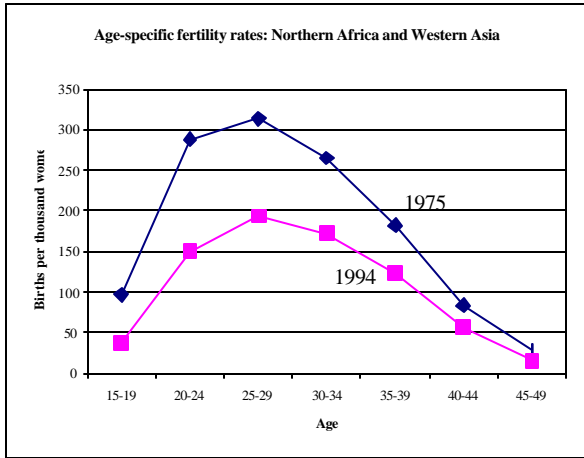


Figure 4. Age-specific fertility rates, 1970s to most recent, for Israel, Argentina, Malaysia, Uruguay and Chile.

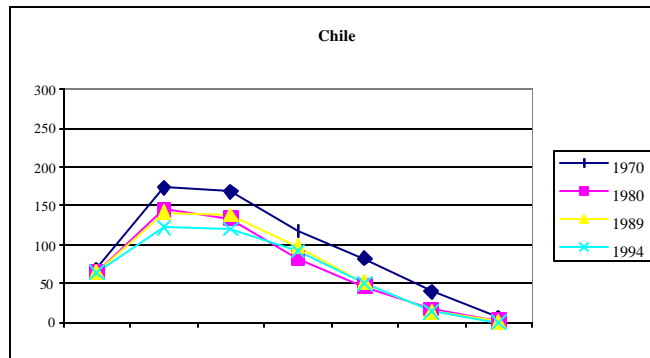
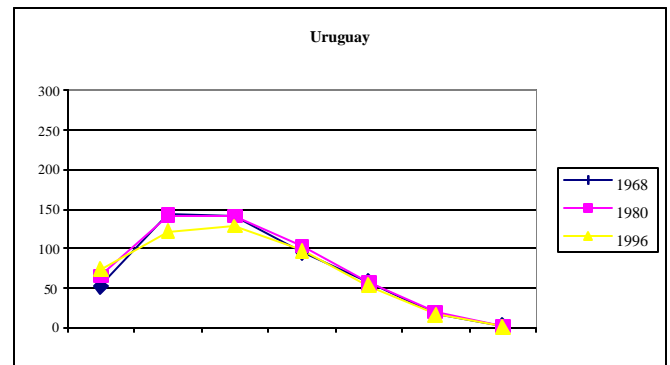
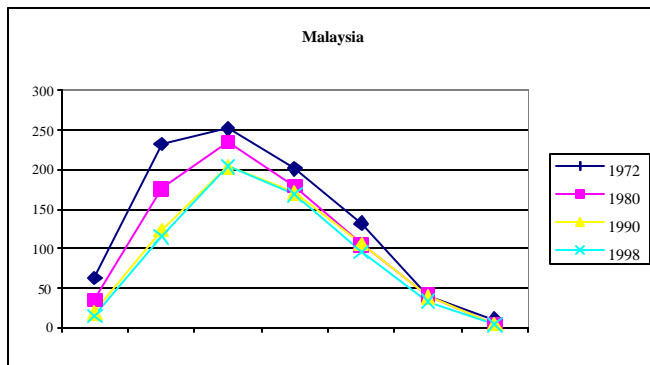
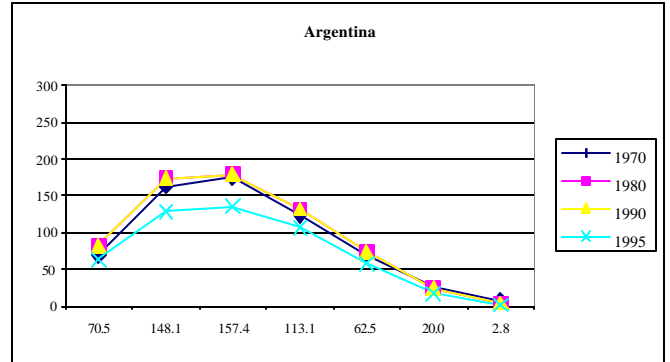
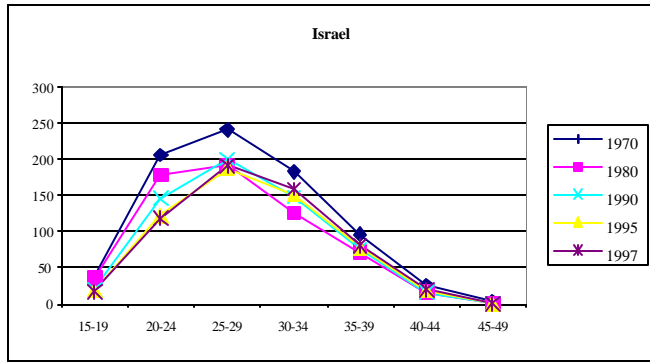


Figure 5. Relationship between change in proportion ever married and change in age-specific fertility rate among women aged 15-19 and 20-24

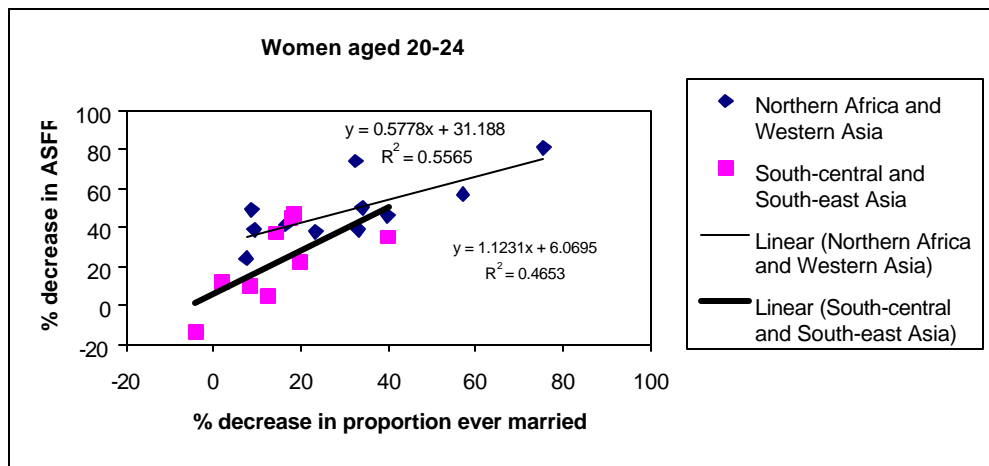
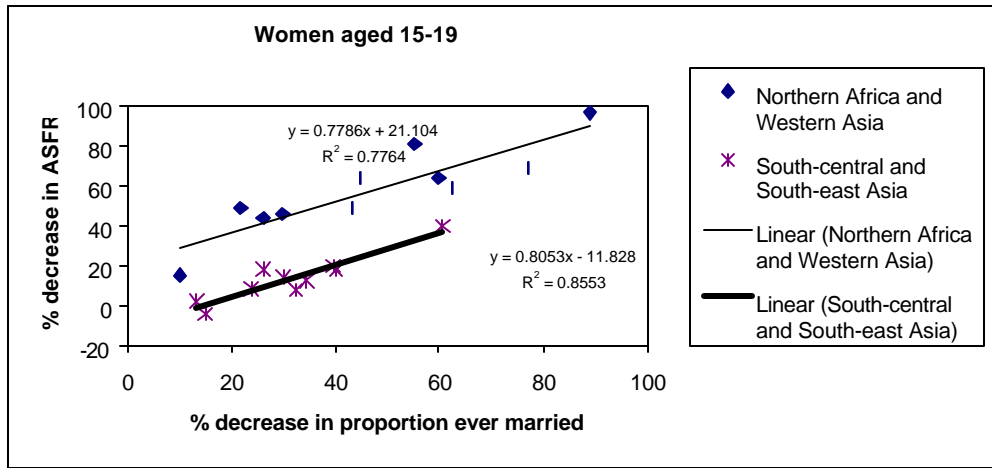


Figure 6. Africa: Trends in total fertility rates by background factors

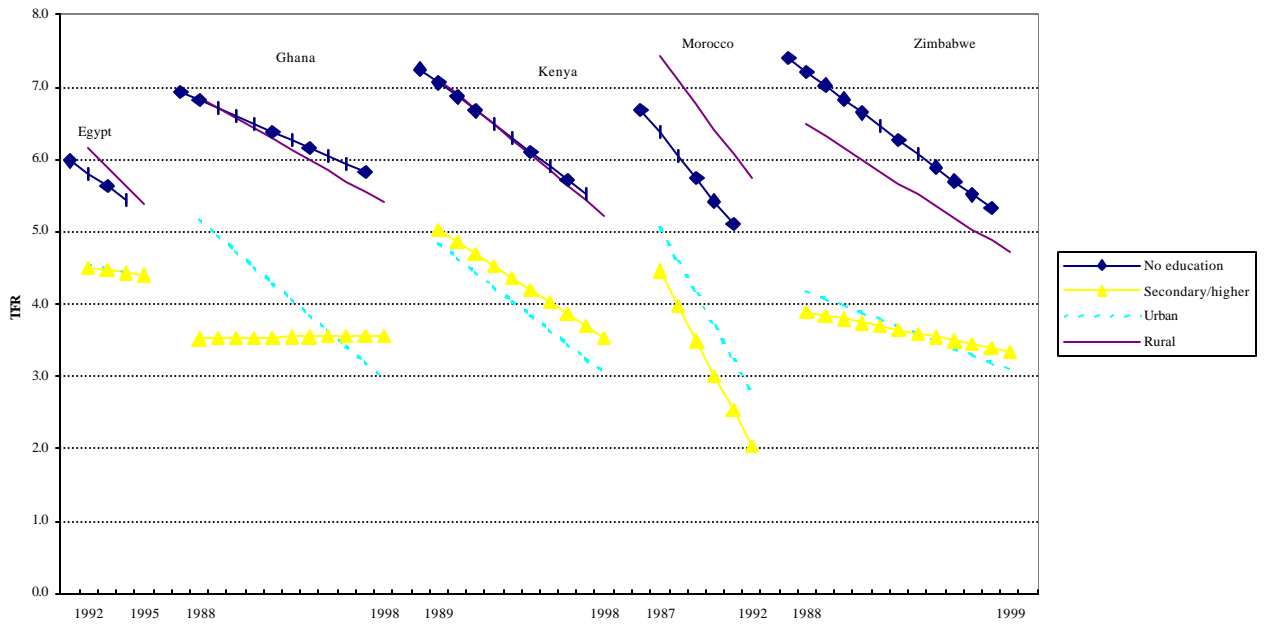


Figure 7. Asia: Trends in total fertility rates by background factors

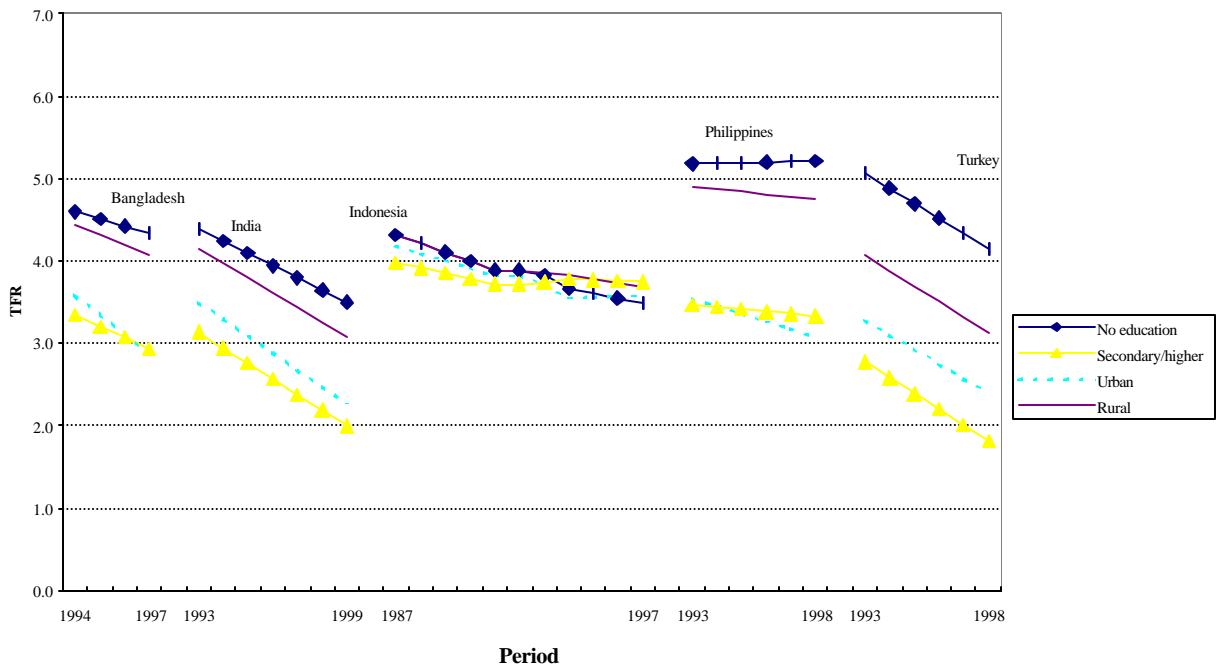


Figure 8. Latin America and Caribbean: Trends in total fertility rates by background factors

