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Abstract

The Islamic Republic of Iran has experienced a phenomenal fertility decline in recent years. The Total Fertility Rate (TFR) has declined from around 7.0 births per woman in 1979 at the time of the Revolution to around 2.1 in 2000. The fertility decline has been pervasive being observed in all provinces and rural and urban areas of Iran. The decline commenced in the mid-1980s, a few years before the revival of an official family planning program in 1989. Although, the family planning program evidently contributed to an acceleration of the decline from the late 1980s, the program itself can be considered to be a response to the demand for smaller family size observed by the mid-1980s. This gives rise to a consideration of how family relationships and values have changed in Iran over the last two decades? How have successive cohorts of Iranian women perceived marriage and family? How have family transformations changed the formation of marriage, marital timing, spouse choice, living arrangements and the number and spacing of children? In other words, how have changes of attitudes affected fertility behaviors in Iran?

Drawing on a recently conducted survey, the Iran Fertility Transition Survey (IFTS), we argue that the Iranian fertility decline has been due to social change at both the macro (societal) and micro (family/individual) levels. The paper will first examine fertility levels and trends in Iran as a whole. We then focus on the four selected provinces of Gilan, Sistan & Baluchistan, West Azarbaijan, and Yazd covered in the IFTS considering both fertility trends and changes in family, fertility behavior and attitudes of married women in Iran.

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Introduction

The Islamic Republic of Iran has experienced a phenomenal fertility decline in recent years. The TFR decreased from around 7.7 in 1966 (Amani, 1970) to around 6.0 in 1976, then rose again to 7.0 in 1980. Despite the approval of family planning methods by Ayatollah Khomeini in 1979, the pre-revolutionary family planning program was suspended immediately after the revolution (Mehryar et al. 1998; Mirzaie 1998; Aghajanian 1995; Aghajanian & Mehryar 1999). Although, no specific population policy was introduced after the revolution, the new government adopted a pro-natalist approach. The legal minimum age at marriage for girls and boys was reduced from 15 and 18 to 13 and 15 years, respectively (Azimi 1981)[4]. The War with Iraq also created a pro-natalist atmosphere by which families were encouraged to have more children (Abbasi-Shavazi et al. 2002). Despite the post-revolutionary, pro-natalist ideology, census own-children estimates show that fertility started to fall again by the mid-1980s, a few years before the revival of the government family planning program in 1989. The TFR declined from 6.8 in 1984 to 6.3 in 1986, and further to around 5.5 in 1988. From 1989, the TFR fell sharply dropping from 5.5 in 1988 to around 2.8 in 1996, more than a 50 per cent decline in 8 years. The own-children estimates of fertility for Iran based on the 2000 Iran Demographic and Health Survey (IDHS) show that the TFR has continued to decline approaching replacement level (2.26) during the period 1998–2000.

Fertility decline has been pervasive being observed in all 28 provinces and rural and urban areas of Iran. Four developed provinces, Gilan, Semnan, Tehran and Isfahan, had reached below-replacement level fertility by 1996 (Abbasi-Shavazi 2001a). The own-children estimates for the three-year period, 1998–2000, from the Iran Demographic and Health Survey indicated that the TFR was below 2.0 in eight provinces, and 18 provinces had fertility rates between 2 and 3 births per woman. The highest provincial TFR in 1998–2000 (4.6) was that of Sistan & Baluchistan province (Abbasi-Shavazi 2002a).

The fertility decline clearly accelerated with the re-commencement of the government family planning program in 1989. The contraceptive prevalence rate rose from 49 per cent in 1989 to around 75 per cent in 2000, and the gap in fertility between urban and rural areas has also been narrowed considerably (Mehryar et al. 1998; Mehryar et al. 2001). However, given the fact that the onset of decline occurred a few years before the revival of the official family planning program in 1989 (Ladier-Fouladi 1996; Abbasi Shavazi 2000a; 2001b,c; 2002a,b), the question has risen as to whether other factors such as social change and transformation of attitudes toward family and fertility paved the way for the success of the family planning program and the phenomenal fertility decline in Iran in recent years. There is evidence of profound shifts in attitudes toward family-related behaviors in much of the world (Morgan and Waite 1987; Thornton and Freedman 1982) and evidence suggests that changing attitudes toward family life have played a pivotal role in demographic trends (Axinn and Thornton, 1993; Thornton 1989; Thornton and Young-Demarco 2001; Thornton and Freedman 1982).

[4] Marriage for girls aged 9 to 12 could only be possible subject to their physical ability, medical approval, and legal permission from the court.

This paper aims to examine women's reproductive behavior as well as attitudes toward family and fertility in Iran. The focus of the paper will be on four selected provinces of Gilan, Sistan & Baluchistan, West Azarbaijan and Yazd covered in the 2002 Iran Fertility Transition Survey. Among the questions to be addressed are: How do women in contemporary Iran perceive marriage and childbearing? How do these attitudes vary across regions and social groups? Have attitudes of women towards marriage, family and childbearing changed in recent years? If so, how far have these changes contributed to the fertility decline in Iran? More importantly, if attitudes have changed, how and why did they change?

Data

Various data sources are used in this paper. First, the 1986 and 1996 Censuses and the 2000 Iran Demographic and Health Survey (IDHS) are used to provide estimates of fertility levels and trends over the last three decades. Second, the 2002 Iran Fertility Transition Survey (IFTS) is used to document changes in attitudes to family and fertility in four selected provinces. The IDHS is based on a representative sample of households throughout the country. The sample included women in 113,913 households in 28 provinces (plus the city of Tehran). The survey covered around 4000 households in each province (2000 households in rural and 2000 households in urban areas). The household response rate was 97.9 per cent. Within a total of 111,090 households, interviewers contacted 91,653 ever-married women aged 10–49 years, and were able to complete the interview with 90,740 women. The response rate for ever-married women was 98.9 per cent. The preliminary evaluation of the survey indicated a high quality data collection and the accuracy of the various demographic measures (Ministry of Health and Medical Education 2002).

The main data source for this study, however, is the 2002 Iran Fertility Transition Survey (IFTS) supported by the Wellcome Trust and conducted with the collaboration of the first and second author under the auspices of the University of Tehran and the Australian National University. The aim of this survey was to assess recent trends and differences in fertility and associated social changes in order to understand the phenomenal fertility decline in Iran. The IFTS re-interviewed women who had been interviewed in the IDHS and was conducted in four provinces of Iran during April-May 2002, 18 months after the IDHS. The criteria for the selection of the provinces will be explained in the next paragraph. The IDHS sampling frame was used to select 50 per cent of women who were interviewed in the four selected provinces of Iran at the time of the IDHS. Around 5190 randomly selected married-women aged 15–49 were re-interviewed.

The IFTS covered the four provinces of Sistan & Baluchistan, West Azarbaijan, Gilan and Yazd. Several reasons justified the selection of the provinces. First, these provinces have displayed very different fertility levels during the period, 1972–1996. A comparison of fertility levels of all provinces with the national average revealed that Sistan & Baluchistan and West Azarbaijan had higher fertility as compared to the total population, while Gilan and Yazd displayed considerably lower fertility than the national level (Abbasi-Shavazi 2000a, b, 2002b). Second, socio-economic characteristics such as literacy, employment, and access to electricity and safe water vary markedly across these provinces. Sistan & Baluchistan province (located in the south-eastern part of Iran and sharing borders with

Afghanistan and Pakistan) stands out with the lowest level of socio-economic development, while Gilan and Yazd approach the highest levels of socio-economic development in the country. Third, there exist substantial ethnic variations among the selected provinces. For example, Sistan & Baluchistan province is populated mainly by *Baluchi*, while West Azarbaijan (located in the northwest of Iran and sharing borders with Turkey and Iraq) contains two large ethnic groups namely *Turks* and *Kurds*. The people living in the two other provinces are mainly *Persians*. Furthermore, a considerable proportion of the population in both Sistan & Baluchistan and West Azarbaijan are Sunni Muslims, while the population in Yazd and Gilan are predominantly Shiites. Thus comparisons between the fertility behavior of different ethnic groups and Shiite-Sunni Muslims would be possible, although the close overlap of ethnicity and religion causes difficulties in identifying their separate effects. The other reason for this selection is that the selected provinces are geographically located in different parts of Iran; Gilan located in the north, West Azarbaijan in the northwest, Yazd in the centre and Sistan & Baluchistan in the southeast of the country. It should also be noted that the two provinces of Gilan and Yazd, despite their relatively similar socio-economic characteristics, experience different social values and attitudes. People in Yazd are known for being 'religious' while people in Gilan are more 'liberal' in terms of values and attitudes. A study of Iranian Values and Attitudes (Ministry of Culture and Islamic Guidance 2002) showed that people in Yazd placed more emphasis on religion in their daily life than Iranians as a whole, as well as people in the developed provinces of Isfahan and Tehran. Selection of a diverse set of provinces also allows testing of the hypothesis of the importance of social inclusion and allows for consideration of varying institutional settings. Some measures of the variability of the provinces are shown in Table 1.

Table 1 Characteristics of the women interviewed in the four provinces included in IFTS 2002

Province	% Female literacy (15–49)	% FP use (2002)	TFR 1998–2000	N Interviewed[1]
Gilan	73.9	79.3	1.67	1274
Sistan & Baluchistan	41.9	47.5	4.64	1300
West Azarbaijan	49.8	79.0	2.52	1368
Yazd	81.0	79.7	2.27	1239

Note:
1 Number of women interviewed in the 2002 Iran Fertility Transition Survey.

The IFTS questionnaire included around 100 questions on various demographic and socio-economic characteristics as well as attitudes of women to children, marriage, women's employment and gender equity within and outside the family. Some characteristics of husbands (place of birth/residence, occupation, language, religion) were also asked in the questionnaire. The interviewers were selected from among Health Officers (*behvarz*) who have been working in Health Houses (*khanah-e Behdasht)* for several years most of whom had participated in the IDHS data collection, and thus were familiar with the field, and had accurate knowledge of the households and respondents (particularly in rural areas). The interviewers were trained by the first, and third authors at workshops held in each province. Field supervisors from the Ministry of Health were present in the field at the time of data

collection to supervise the interviewer teams and to check the accuracy of the data. The preliminary evaluation of the data indicates a high quality of data collection and accuracy of the various demographic measures. The survey is the most significant undertaken in recent years to explain the fall of fertility in Iran.

Methodology

Social changes can be studied with two distinct forms of period or cohort approaches. Period effects are the result of societal changes influencing all age and cohort groups similarly at one point in time, while marriage and birth cohort effects are defined as the result of social changes that affect only the individuals of one particular birth or marriage cohort (Thornton and Lin 1994:15). There are some difficulties in studying social change using one cross-sectional survey, and particularly compared to having multiple cross-sectional studies. However, with a cross-sectional study, it is possible to categorize people by their year of birth or year of marriage, and then see what their experience was at the same age or life course transition stage. For example, by categorizing people by year of birth, it is possible to see the number of years of education, age at marriage, and work before marriage of the various birth cohorts. Since age is roughly controlled in this case, we can conclude that any differences in education, marriage, work, and attitudes toward childbearing across birth cohorts can be the product of social change.

While the data used in this paper provide many opportunities for the study of family change in Iran, there are some limitations involved as both surveys cover only married women of childbearing ages. Thornton (1994:419) noted that sample limitations in one cross-sectional study introduce truncation biases of marriage ages across the respective birth and marriage cohorts presented in the study. This is illustrated in Table 2.

Table 2 Ages at marriage that can be represented within different birth and marriage Cohorts in a sample of ever-married women aged 15–49 in 2000

Birth cohort	Possible ages at marriage*	Marriage cohort	Possible ages at marriage*
1951–55	0–49	**1961–65**	0–14
1956–60	0–44	**1966–70**	0–19
1961–65	0–39	**1971–75**	0–24
1966–70	0–34	**1976–80**	0–29
1970–75	0–29	**1981–85**	0–34
1976–80	0–24	**1986–90**	5–39
1981–85	0–19	**1990–95**	10–44
		1996–00	15–49

* Theoretical marriage ages

As can be seen from Table 2, the possible ages at marriage of women who were eligible for inclusion in the study vary by birth and marriage cohort. Over time, from the oldest to the youngest, birth cohorts become increasingly limited to women married at younger ages. The marriage cohort truncation problem works in the opposite direction. As marriage cohorts go back in time, the cohorts become increasingly limited to women married at younger ages. If data are tabulated according to both birth and marriage cohorts and birth cohorts are

approximately matched to marriage cohorts in calendar time, the range of the results provides some bounds on the magnitudes of the trends observed because the birth cohorts and marriage cohorts are biased (in terms of age at marriage) in opposite directions (Thornton, Chang and Lin, 1994:150). Furthermore, where marriage ages are concentrated in a relatively narrow range and that range is covered by the possible ages at marriage for the birth year or marriage year cohort, then any bias will be small.

As the mean age at marriage has been approximately 20 years, we compare results for marriage cohorts with results for birth cohorts 20 years earlier. The birth and marriage cohorts are defined to represent different periods of social change in Iran.

Table 3 Distribution of marriage and birth cohorts by province, IFTS 2002

Cohort and period		Province				Total	
		Gilan	West Azarbaijan	Sistan & Baluchistan	Yazd	No.	%
Marriage Cohort	Before 1980s	363	389	255	428	1435	29
	1980s	392	429	336	376	1533	32
	After 1980s	507	496	428	435	1866	39
	Total	1262	1314	1019	1239	4834	100
Birth Cohort	Before 1960s	366	362	265	350	1343	26
	1960s	451	489	433	415	1788	34
	After 1960s	460	517	598	484	2059	40
	Total	1277	1368	1296	1249	5190	100

Note: Around 6.9 per cent of the total women did not report their age at marriage and they were considered as missing.

The selected periods and the numbers in each cohort are shown in Table 3. As can be seen, the distribution of numbers across the three birth cohorts is similar to the distribution across the three marriage cohorts.

The different periods of social change in Iran represented by the three time periods (of marriage) are as follows:

Before 1980s: During this period, the first national family planning program was implemented by the Shah, the legal minimum age at marriage for boys and girls was increased, and various programs were implemented to improve the status of women in the society.

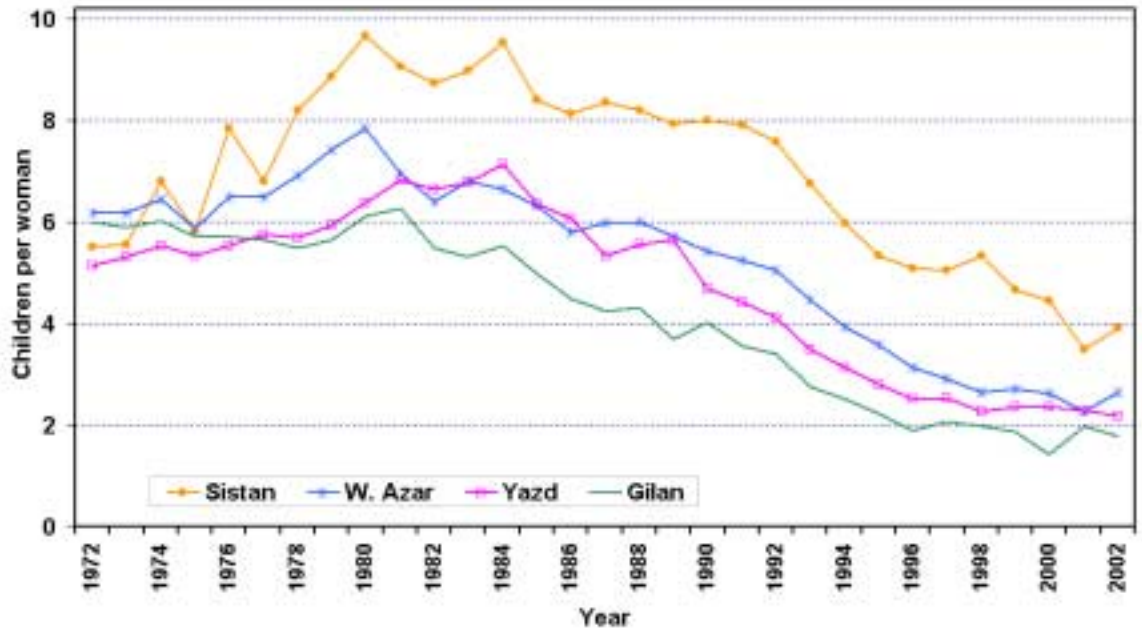
1980s: This is the first decade following the Islamic revolution when the country experienced a phenomenal socio-political change. It is also the period of the Iran-Iraq War. The family planning program was suspended, the war situation changed peoples' lives, a rationing system was introduced to meet people's basic needs, and the legal minimum age at marriage decreased. On the other hand, the egalitarian nature of the revolution led to considerable improvements in education and health systems, and there were major changes in rural areas of Iran.

After 1980s: The period from 1990 onwards was more pragmatic in the approach to social and economic issues. The government implemented many infrastructure projects in order to improve the economic situation of the country. The family planning program was revived during this period and the Islamic government supported the family planning program and provided contraceptives to people throughout the country (Abbasi-Shavazi et al. 2002). The election of the Khatami government in 1997 heralded a democratization period when various political groups formed and the society experienced profound shifts on political issues. Freedom of speech and expression of different values and attitudes became more prevalent and restrictions on peoples' personal and individual behavior became relatively more limited.

Fertility levels and trends in the four selected provinces

Studies have shown that the fertility decline in Iran has been inclusive and pervasive over the last decades, that is, all provinces and rural and urban areas of Iran have experienced a sharp decline in fertility in recent years (Abbasi-Shavazi 2000a,b; 2002a,b; Mehryar et al; 2001; Ministry of Health and Medical Education 2002). In this section, we demonstrate the trend of fertility in the four selected provinces for the period 1972–2002 (Figure 1).

Figure 1 Fertility trends in the four selected provinces during 1972–2002l



Source: The 1986 and 1996 Censuses, IDHS 2000 and IFTS 2002

The four provinces represent different levels of fertility in Iran. Gilan has had low fertility as compared with other provinces over the period 1972–2002, while Sistan & Baluchistan has had the highest fertility among the four provinces. The other two provinces of Yazd and West Azarbaijan, in order, have had fertility between the lowest and highest fertility level over the period. The trend of fertility in the four provinces is, however, similar to the national level: a rise of fertility after the revolution followed by a stall immediately after the

revolution, onset of fertility decline by mid-1980s, acceleration of the decline during the 1990s, and finally deceleration of fertility decline by the late 1990s.

Cohort fertility in the four provinces

In this section, we examine the mean number of children ever born for the various cohorts according to the different periods of social change in Iran (Table 4). Comparing the marriage and birth cohorts, there is a close similarity in Gilan for all three periods but, in the other provinces, for the two later time periods when fertility had fallen, the means for the marriage cohorts are significantly lower than the means for the birth cohorts. As Gilan has an older age at marriage than the other three provinces (see below), this suggests that the 20-year gap used between the marriage and the birth cohorts fits Gilan better than it fits the other provinces. A shorter interval between the birth and marriage cohorts in these three other provinces would have brought the means closer together.

Table 4 Mean Number of children ever born for marriage and birth cohorts by province, IFTS 2002

Province	Marriage Cohort	Mean	Birth Cohort	Mean
Gilan	Before 1980s	5.1	Before 1960s	4.9
	1980s	3.2	1960s	3.2
	After 1980s	1.5	After 1960s	1.6
West Azarbaijan	Before 1980s	6.9	Before 1960s	6.7
	1980s	4.1	1960s	4.6
	After 1980s	1.9	After 1960s	2.1
Sistan & Baluchistan	Before 1980s	7.7	Before 1960s	8.0
	1980s	5.5	1960s	6.1
	After 1980s	2.3	After 1960s	3.0
Yazd	Before 1980s	6.1	Before 1960s	6.1
	1980s	3.7	1960s	4.1
	After 1980s	1.5	After 1960s	1.9

Source: Iran Fertility Transition Survey 2002

As expected, mean number of children ever born has declined for all cohorts. The very high levels of fertility for the earliest cohort are generally consistent with the cross-sectional estimates of fertility shown in Figure 1. Across the cohorts, the provincial differences observed in Figure 1 across time are also confirmed. The level of fertility of all marriage cohorts in Sistan & Baluchistan was much higher than the levels for other provinces, while marriage cohorts in Gilan have experienced lower fertility than their counterparts in other provinces.

Nuptiality change and fertility decline

It is generally assumed that early marriage is associated with a high proportion eventually marrying. Rising mean ages at marriage and rising percentages single are, on the other hand,

associated with declines in period measures of fertility such as the birth rate. Later marriage reduces the total duration of fecund exposure to sexual activity, and shifts it to the older ages of lower fecundity (Smith 1983: 476–80; VandenHeuvel & McDonald 1994:69). There is an inverse relationship between the number of children ever born and age at marriage at the level of individual couples (Knodel 1983:78). In this section, we will first discuss the change in nuptiality for Iran in general, and then for the four provinces.

Table 5 Female Singulate Mean Age at Marriage (SMAM) and percentage of women aged 20–24 never married, 1976 to 1996, Iran by selected provinces

Province	FSMAM			% Never married, aged 20–24		
	1976	1986	1996	1976	1986	1996
IRAN	19.5	19.7	22.0	21.4	22.0	39.3
Gilan	21.2	21.5	23.4	32.5	40.6	48.8
Sistan & Baluchistan	18.4	18.5	20.5	12.6	16.2	28.0
West Azarbaijan	20.0	20.8	22.2	21.8	31.0	41.1
Yazd	19.5	19.5	20.9	12.1	12.1	30.0

Note: FSMAM = Female Singulate Mean Age at Marriage
Sources: Statistical Centre of Iran, published data from the 1976, 1986 and 1996 censuses.

Age at marriage has increased in Iran over the last two decades. The extent of change was greater during the period 1986–1996 than in the earlier decade, 1976–1986. Table 5 shows the female singulate mean age at marriage (SMAM) and the proportion of women aged 20–24 who were never married during 1976–1996 for Iran and the selected provinces. As can be seen from the table, SMAM for Iran increased slightly from 19.5 years in 1976 to 19.7 years in 1986, but then increased sharply to 22 years during the period, 1986–1996. Interestingly, the Government of the Islamic Republic of Iran has consistently encouraged early marriage since 1979. During the decade after the 1979 Islamic Revolution, young couples were offered many incentives for early marriage. The legal minimum age at marriage was reduced from 15 to 13 for girls after the Revolution.

Despite the encouragement of early marriage from 1980, age at first marriage increased slightly during this period. The proportion of women aged 20–24 who had never married rose moderately from 21.4 per cent in 1976 to 22.0 per cent in 1986. However, there was a sharp increase in this proportion to 39.3 per cent in the period to 1996. Significant changes took place in marriage patterns in both rural and urban areas of Iran during the period 1986–1996. It should also be noted that there was little difference in ages at marriage for women in urban and rural areas. In rural areas, the female singulate mean age at first marriage increased from 19.7 in 1986 to 22.1 in 1996, whereas, in the urban areas, the figure rose from 20.1 to 22.0 (Abbasi-Shavazi 2000b). Like Iran as a whole, all four provinces experienced a small increase in the proportion never-married during 1976–1986, but recorded a large increase during 1986–1996. In this period, the proportion of women aged 20–24 who had never married almost doubled in all the provinces. Similarly, all provinces revealed a moderate increase in SMAM during 1976–86 (except Yazd), followed by a sharp rise during 1986–1996. However, the extent of change was different from one province to

another with Yazd showing the smallest increases. Despite the increase in mean age at marriage, universality is one of the major characteristics of the Iranian marriage pattern, as the vast majority of women marry by age 35, and only a small proportion of women are never married by age 49.

Figure 2 uses IFTS data to show the mean age at marriage for marriages occurring in each year from 1966 to 1999 in each province. The sharp rise in the 1960s evidently reflects the bias in the sample as described above. Marriage ages appear to have risen during the 1970s. This can be attributed to the population policy and the family planning program during the late years of the Shah's regime during which time several steps were taken to improve the status of women. These include an increase in the legal age at marriage for both males and females, and also an increase in female labour force participation. In all provinces other than Gilan, there is evidence of a fall in age at marriage in the early years following the revolution when there were government incentives to marry early and when the war may have induced earlier marriage. Marriage ages began to rise again in the late 1980s and the rise has continued ever since gaining momentum from 1997 onwards.

One of the questions raised earlier was the extent to which age at marriage has contributed to the fertility decline in Iran. Figure 3 shows the cross-sectional relationship between age at marriage and fertility in the four provinces. It is evident that from the late 1980s onwards, age at marriage was rising as fertility was falling.

To what extent has the change in age at marriage contributed to the fertility decline in Iran and the provinces? Abbasi-Shavazi (2000b) has decomposed the changes in total fertility rate from 1976 to 1996 into the components of changes in nuptiality and marital fertility for Iran by province as well as for rural and urban areas. He found that total fertility increased from 6.09 in 1976 to 6.24 in 1986, a difference of 0.14. This increase was due to an increase in marital fertility (0.22) offset by nuptiality change (-0.07). The total fertility rate fell substantially by 3.71 (births per woman) from 1986 to 1996. Most of the fall was due to the decline in marital fertility (3.11) with 0.60 being due to nuptiality change. In other words, 84 per cent of the fertility decline was due to the change in marital fertility and only 16 per cent to nuptiality change. The results for each of the four provinces were identical to those for the total population of Iran. Thus, the task of explanation of the substantial decline in fertility in Iran and in each of the four provinces becomes largely a question of why fertility within marriage has fallen. The following section provides a preliminary assessment of the association between the fertility trend and the transformation of attitudes toward family and fertility.

Figure 2 Mean age at first marriage by province 1966–1999, IFTS 2002

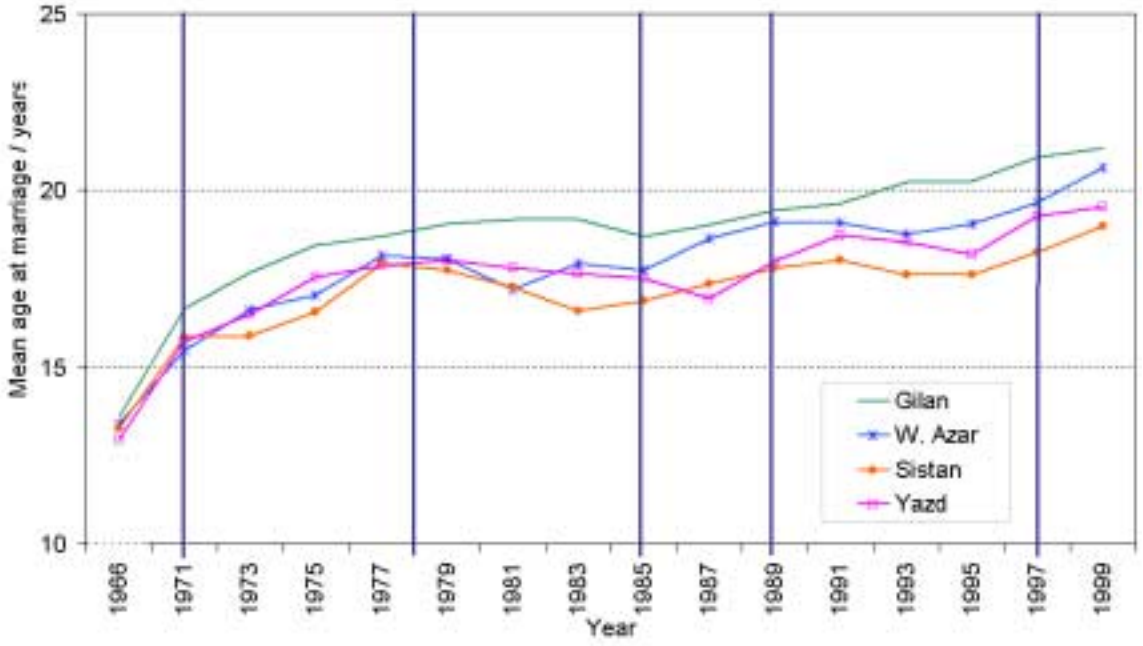
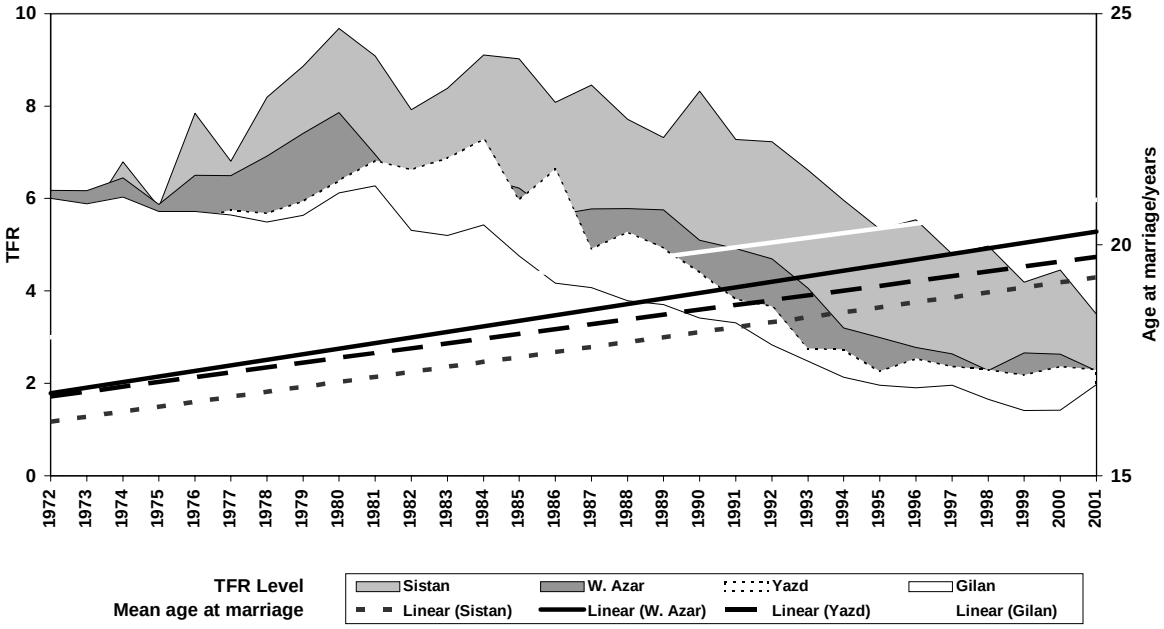


Figure 3 Mean age at first marriage and fertility by province 1972–2000, IFTS 2002



Source: The 1986 and 1996 Censuses, IDHS 2000 and IFTS 2002

Selected social and attitudinal changes

The following analysis considers cohort trends in selected indicators of social and attitudinal change. This is a preliminary investigation of factors that may have been associated with the fertility decline in Iran. At this stage, we are seeking measures that show strong trends across cohorts that are consistent with the timing of the fall in fertility and are evident in each of the four provinces, albeit with appropriate variation across the provinces. The measures chosen are related to theories of fertility decline and were included in the survey in this context. Clearly, a more thorough, multivariate analysis will be required subsequent to the findings of this paper.

Education

It is very conventional to associate changes in education levels of women with changes in fertility levels. So conventional, in fact, that education plays a part in almost all theoretical approaches to fertility transition. Education is said to provide access to modern ways of thinking, to provide confidence to engage with the modern world, to reduce infant and child mortality, to stimulate higher levels of gender equity within couple relationships and to promote labor force participation of women in the cash economy hence raising the opportunity cost of having children. Education of women also may lead to a greater emphasis on their part on the 'quality' of children as distinct from the quantity of children. Finally, education is a broad indicator of societal modernization. As education levels increase, the educated woman is very likely to be married to an educated man and to be living in an educated society. As already described, the egalitarian nature of the Islamic Revolution led to widespread education of women in Iran especially in rural areas where education for women had been neglected.

Table 6 shows the change in education levels of women across birth and marriage cohorts. Based on the analysis of fertility above, we would be looking for a considerable change from cohort to cohort and in every province. This is precisely what the table shows. Education levels change dramatically from one cohort to the next for both marriage and birth cohorts and for all provinces. The change also extends across the education distribution. It is not simply a shift from illiteracy to primary education; there are also large shifts at the highest education levels as well.

Differences in education levels between provinces match the fertility differences with the exception that the relatively high education level of women in Yazd, especially in the earliest cohort is not matched by lower fertility. As indicated below, Yazd has family-religious values that may have counter-balanced the effects of its higher education levels.

Table 6 Percentage distribution of birth cohorts by level of education and province, IFTS 2002

	Provinces		Level of education				
			Illiterate	Primary	Secondary	Diploma and Higher	Total
Marriage cohort	Gilan	Before 1980s	57.9	24.3	6.5	11.3	100.0
		1980s	22.8	29.0	28.9	19.3	100.0
		After 1980s	5.6	30.8	34.8	28.8	100.0
	West Azarbaijan	Before 1980s	74.5	16.7	4.8	4.0	100.0
		1980s	47.7	26.8	18.0	7.5	100.0
		After 1980s	23.8	34.8	27.3	14.1	100.0
	Sistan & Baluchistan	Before 1980s	71.3	17.3	7.3	4.0	100.0
		1980s	52.0	27.3	12.5	8.2	100.0
		After 1980s	42.3	27.0	15.6	15.1	100.0
	Yazd	Before 1980s	31.3	58.5	3.8	6.4	100.0
		1980s	13.2	54.2	16.9	15.6	100.0
		After 1980s	3.8	34.9	22.8	38.5	100.0
Birth cohorts	Gilan	Before 1960s	55.6	22.0	6.2	16.3	100.0
		1960s	22.9	31.4	25.7	20.0	100.0
		After 1960s	6.6	30.7	38.2	24.4	100.0
	West Azarbaijan	Before 1960s	76.5	14.2	3.2	6.2	100.0
		1960s	50.2	26.8	15.9	7.1	100.0
		After 1960s	26.2	34.3	27.6	12.0	100.0
	Sistan & Baluchistan	Before 1960s	78.4	15.4	1.7	4.5	100.0
		1960s	60.0	19.0	12.1	8.8	100.0
		After 1960s	50.7	27.6	12.7	9.0	100.0
	Yazd	Before 1960s	34.9	51.9	2.8	10.4	100.0
		1960s	13.4	59.4	12.4	14.7	100.0
		After 1960s	5.4	37.7	24.6	32.3	100.0

Attitudes to age at marriage

Respondents were asked their views about the lowest age at marriage and the highest age at marriage that would be appropriate for women and for men in their society. The results are shown in Table 7. Here, the attitude is a current (2002) attitude and it is evident that there is not much variation across cohorts. From the perspective of theory, we might expect that younger women, particularly given the trends in education, would favour later ages at marriage than older women. If their preferences then carried weight, then fertility may fall because of later age at marriage. A preference for later age at marriage might also indicate the perceived availability of alternatives to marriage in the short to medium term, in particular, paid employment.

Table 7 Minimum and maximum mean age at marriage for boys and girls by birth and marriage cohort, IFTS 2002

	Province		Minimum for girls	Maximum for girls	Minimum for boys	Maximum for boys
Marriage Cohort	Gilan	Before 1980s	19.5	23.3	22.8	26.8
		1980s	19.8	23.8	23.2	27.4
		After 1980s	20.2	24.4	24.1	28.4
	West Azarbaijan	Before 1980s	18.8	23.1	22.9	27.2
		1980s	19.1	23.5	23.0	27.7
		After 1980s	19.2	23.8	23.3	27.9
	Sistan & Baluchistan	Before 1980s	17.6	21.3	21.7	25.6
		1980s	17.5	20.9	21.6	25.9
		After 1980s	17.7	21.2	21.8	26.0
	Yazd	Before 1980s	18.5	22.4	22.6	26.9
		1980s	18.6	22.8	23.1	27.5
		After 1980s	19.0	23.5	23.6	28.2
Birth Cohort	Gilan	Before 1960s	19.5	23.3	22.9	26.9
		1960s	19.8	23.9	23.3	27.6
		After 1960s	20.2	24.3	23.9	28.2
	West Azarbaijan	Before 1960s	18.8	23.2	22.7	27.1
		1960s	18.9	23.3	23.0	27.8
		After 1960s	19.2	23.7	23.2	27.8
	Sistan & Baluchistan	Before 1960s	17.4	21.1	21.5	25.5
		1960s	17.2	20.7	21.4	25.4
		After 1960s	17.0	20.4	21.1	25.4
	Yazd	Before 1960s	18.6	22.6	22.7	27.1
		1960s	18.5	22.5	22.9	27.2
		After 1960s	19.0	23.4	23.6	28.1

Only small rises in preferred ages at marriage are apparent across cohorts. This can be interpreted to mean either that attitudes have not changed across time or that they have changed cross-sectionally for all cohorts. At least, the data show that the older generation and the younger generation are presently in strong agreement about appropriate ages at marriage. The older generation does not have an expectation that their daughters should marry at very young ages. Nevertheless, the preferred marriage ages remain relatively young by international standards given the levels of education. This may partly be because work opportunities in the modern economy for young women, even young educated women, are very meager presenting little or no alternative to relatively early marriage. Thus, unlike some countries especially in East Asia and particularly in Japan (Tsuya and Mason 1995), the fertility decline does not appear to have been related to a social change in which young women remain single longer and become involved in employment outside the household. Differences by province, on the other hand, do match the fertility differences with the

exception that Yazd, again, appears to have early marriage preferences compared to the ranking of its fertility.

Relationship between husband and wife

Cousin marriage has been very common in Iran. If the incidence of cousin marriage were to change across time, this would suggest that there were new ideas about the nature of the marriage relationship. It would suggest that family control over marriage was waning thus providing more autonomy to the younger generation. This autonomy might then transfer to changed fertility behaviour.

Given the huge changes in education levels across cohorts, Table 8 shows the rather surprising result that there has been little or no change across cohorts in the incidence of marriage with a relative. Cousin marriage stands at more than 70 per cent in Sistan and Baluchistan. Despite its very low fertility, marriage with a relative remains very prominent in Yazd accounting for over 40 per cent of all marriages. Thus, the fertility decline has taken place while family arrangements about the nature of the marriage relationship have remained unchanged.

Table 8 Distribution of marriage and birth cohorts by relationship with husband and province, IFTS 2002

	Province		Relationship with husband		
			Non-relative	Relative	Total
Marriage cohort	Gilan	Before 1980s	75.5	24.5	100.00
		1980s	74.1	25.9	100.00
		After 1980s	77.9	22.1	100.00
	West Azarbaijan	Before 1980s	69.7	30.3	100.00
		1980s	62.5	37.5	100.00
		After 1980s	68.7	31.3	100.00
	Sistan & Baluchistan	Before 1980s	26.4	73.6	100.00
		1980s	26.2	73.8	100.00
		After 1980s	22.9	77.1	100.00
	Yazd	Before 1980s	52.1	47.9	100.00
		1980s	51.1	48.9	100.00
		After 1980s	57.8	42.2	100.00
Birth cohort	Gilan	Before 1960s	75.4	24.6	100.0
		1960s	75.9	24.1	100.0
		After 1960s	76.8	23.2	100.0
	West Azarbaijan	Before 1960s	73.2	26.8	100.0
		1960s	62.7	37.3	100.0
		After 1960s	67.8	32.2	100.0
	Sistan & Baluchistan	Before 1960s	25.5	74.5	100.0
		1960s	25.4	74.6	100.0
		After 1960s	19.6	80.4	100.0
	Yazd	Before 1960s	53.0	47.0	100.0
		1960s	53.3	46.7	100.0
		After 1960s	54.7	45.3	100.0

Attitudes about marriage with a relative

As the above tables show a fairly close relationship between the results for birth cohorts and the results for marriage cohorts, the remainder of the analysis will be based only on marriage cohorts.

Table 9 Attitudes of women regarding relative marriage for boys and girls by province and marriage cohorts, IFTS 2002

Province	Marriage cohort	Is it better for boys to marry a relative?			
		Relative	None relative	No difference	Total
Gilan	Before 1980s	11.1	75.4	13.5	100.0
	1980s	6.9	78.4	14.8	100.0
	After 1980s	9.3	78.5	12.3	100.0
West Azarbaijan	Before 1980s	26.4	57.2	16.4	100.0
	1980s	22.2	61.4	16.4	100.0
	After 1980s	21.3	61.6	17.1	100.0
Sistan & Baluchistan	Before 1980s	63.6	13.8	22.6	100.0
	1980s	61.5	18.1	20.4	100.0
	After 1980s	62.7	13.6	23.6	100.0
Yazd	Before 1980s	29.6	52.9	17.5	100.0
	1980s	22.7	64.3	13.1	100.0
	After 1980s	18.2	69.2	12.7	100.0
Province	Marriage cohort	Is it better for girls to marry a relative?			
		Relative	None relative	No difference	Total
Gilan	Before 1980s	11.1	76.2	12.7	100.0
	1980s	7.7	78.3	14.0	100.0
	After 1980s	9.3	78.5	12.3	100.0
West Azarbaijan	Before 1980s	24.1	58.9	17.0	100.0
	1980s	22.1	62.0	15.9	100.0
	After 1980s	21.7	61.5	16.8	100.0
Sistan & Baluchistan	Before 1980s	63.1	13.8	23.1	100.0
	1980s	62.7	17.3	20.0	100.0
	After 1980s	64.1	12.1	23.9	100.0
Yazd	Before 1980s	28.9	53.7	17.4	100.0
	1980s	23.6	64.3	12.2	100.0
	After 1980s	19.6	67.7	12.7	100.0

The table on attitudes towards marriage with a relative shows that a strong preference for this type of marriage remains prevalent only in Sistan & Baluchistan, very likely reflecting Baluchi culture. Minor changes are also observed from older to younger cohorts with regard to attitudes towards relative marriage. However, there is little difference between cohorts in their attitudes to marriage with a family member. Young people do not display more liberal attitudes than the older generation. While the 'no difference' category makes explanation tentative, it is interesting that attitudes to marriage with a relative seem to be running ahead

of behaviour. Thus, there is some evidence that behaviour may be modified somewhat in this regard in the future reflecting some shift away from traditional approaches to marriage, but, again, this change is insignificant when compared to the change in fertility. We would conclude once again that the explanation of fertility decline cannot be sought in changes in traditional forms of marriage arrangement, or even attitudes related to these arrangements. The fertility decline has occurred with little change in these arrangements.

Residence after marriage

With the notable exception of Yazd, a similar conclusion can be drawn in relation to place of residence following the marriage. The proportions of couples that lived with the extended family have not changed across time in three of the four provinces (Table 10).

Table 10 Co-residence with relatives after marriage by province and marriage cohorts, IFTS 2002

Province	Marriage cohort	Living the first two years after marriage with:				
		woman's relative	woman and husband's relative	husband's relative	None	Total
Gilan	Before 1980s	5.8	4.2	59.4	30.7	100.0
	1980s	8.4	3.1	61.0	27.5	100.0
	After 1980s	9.4	4.7	57.6	28.3	100.0
West Azarbaijan	Before 1980s	2.5	7.1	71.3	19.1	100.0
	1980s	3.6	6.2	79.1	11.2	100.0
	After 1980s	3.2	5.7	76.9	14.2	100.0
Sistan & Baluchistan	Before 1980s	20.2	6.0	45.1	28.7	100.0
	1980s	21.7	5.4	39.3	33.6	100.0
	After 1980s	24.9	7.9	42.1	25.1	100.0
Yazd	Before 1980s	12.8	4.4	55.3	27.6	100.0
	1980s	8.0	1.7	48.5	41.7	100.0
	After 1980s	19.2	1.8	26.2	52.8	100.0

In Yazd, there was a fairly substantial movement away from living with the extended family after marriage but this may well be related to the prevalence of long distance migration in Yazd Province, especially to the City of Yazd. To explain fertility decline, we are looking for features that are replicated across all four provinces. Thus, again, changes in family organization do not seem to have been important.[5]

[5] The question asked if the couple lived for at least one month with one of their husband's or their own relatives after marriage. If so, then they should choose options one to three accordingly, otherwise they should choose the 'none' category. Thus, the high prevalence of living with relatives shown in the table does not necessarily imply a long period of co-residence with relatives after marriage.

Preference for early marriage or continued education for girls

Table 11 shows that, across all provinces and across all marriage cohorts, there is a strong preference that girls continue their education in preference to marrying early. The majority (more than 70 per cent) of women of the three marriage cohorts preferred education over marriage for girls, the exception being Yazd where women expressed more conservative views toward marriage. This indicates a valuing of education for girls despite the fact that this does not flow through to high rates of employment prior to marriage.

Table 11 Attitudes of women towards preference for early marriage or more education for a girl by province and marriage cohorts, IFTS 2002

Province	Marriage cohort	Marriage or education for girl?		
		Marriage	Education	Total
Gilan	**Before 1980s**	30.4	69.6	100.0
	1980s	26.5	73.5	100.0
	After 1980s	28.2	71.8	100.0
	Total	28.3	71.7	100.0
West Azarbaijan	**Before 1980s**	23.1	76.9	100.0
	1980s	20.6	79.4	100.0
	After 1980s	19.0	81.0	100.0
	Total	20.7	79.3	100.0
Sistan & Baluchistan	**Before 1980s**	28.8	71.2	100.0
	1980s	24.6	75.4	100.0
	After 1980s	26.9	73.1	100.0
	Total	26.6	73.4	100.0
Yazd	**Before 1980s**	45.5	54.5	100.0
	1980s	46.8	53.2	100.0
	After 1980s	34.8	65.2	100.0
	Total	42.2	57.8	100.0

The pattern seems to be that it is good for girls to be educated and this has flowed through to substantial increases in levels of education for girls, but, to this point in time, it has been mainly education for marriage and family rather than education for employment. Nevertheless, the strong preference for education for girls has had its outcome and may have had an impact on the status of women within the marriage. This in turn, as argued above, may lead to lower fertility. Interestingly, Yazd, a conservative province, maintains relatively conservative attitudes in this regard despite the fact that its education levels are actually higher than in any of the other four provinces (see Tables 1 and 6).

Overall, as indicated, education is valued in the society even among older cohorts who were either illiterate or less educated. This may be considered as a measure of ideational change in the society as there are few generational differences in the provinces under scrutiny, particularly in West Azarbaijan and Sistan & Baluchistan.

Women who believed that girls should marry early rather than continue their education, had more-or-less traditional gender values. Most of them indicated that girls should marry early either because they cannot find the opportunity to marry later, or they considered that the

main task of women is housekeeping. However, one third of these women, again, thought that girls could continue their education after marriage.

Table 12 Reasons for the preference for more education for a girl, IFTS 2002

Provinces	Marriage cohorts	Why education is better for girls?				
		Find more opportunity for marriage	Children raring in future	To find an appropriate job	Other	Total
Gilan	Before 1980s	12.2	7.1	68.1	12.6	100.0
	1980s	13.9	8.6	69.7	7.7	100.0
	After 1980s	16.0	12.1	62.5	9.4	100.0
West Azarbaijan	Before 1980s	15.8	8.2	70.6	5.3	100.0
	1980s	12.5	9.1	69.1	9.2	100.0
	After 1980s	18.5	11.2	62.3	8.0	100.0
Sistan & Baluchistan	Before 1980s	12.3	18.8	61.7	7.2	100.0
	1980s	10.8	19.9	64.1	5.2	100.0
	After 1980s	11.3	24.1	60.4	4.2	100.0
Yazd	Before 1980s	21.3	33.1	42.0	3.5	100.0
	1980s	38.0	31.7	26.9	3.5	100.0
	After 1980s	41.0	27.5	28.4	3.1	100.0

The majority (around 70 per cent) of women who preferred education over early marriage for girls believed that girls should continue their education to find an appropriate job in the future (Table 12). As indicated earlier, female employment is very low in Iran (around 12 per cent). However, with the rising of education levels, occupational aspirations of girls have risen and it is likely that Iranian society will experience major changes with regard to women's employment in the future. The percentages of women who considered girls should be educated in order to find a job in the future in the three provinces of Gilan, West Azarbaijan, and Sistan & Baluchistan were high and at a similar level. On the other hand, compared to work, women in Yazd placed more emphasis on enhancement of marriage and family outcomes as reasons for girl's to pursue education, and this pattern was more evident for the more recent cohorts compared to the oldest cohort. In Yazd, there may been an expectation of the 'proper' answer to this question but this in itself has meaning. The expression of more conservative attitudes by women in Yazd is consistent across all indicators.

Family planning and fertility behavior

Turning now to more direct measures of fertility behavior, Table 13 shows little likely impact on fertility of a change in the interval between marriage and first birth. The interval is short in general and highest in Sistan & Baluchistan which has the highest level of fertility. The longest first birth interval in the table relates to the cohort that had the highest fertility – the oldest cohort in Sistan & Baluchistan.

The interval between marriage and first birth decreased for the marriage cohorts of 1976–80 and 1981–85 (data not shown here). This is consistent with the rise of fertility immediately

before and after the revolution (Abbasi-Shavazi 2000a, 2001b). Marriage and childbearing was encouraged during the first decade after the revolution, legal mean age at marriage for both girls and boys decreased, and marriage was considered as a way of keeping young boys and girls faithful to traditional family values rather than being corrupted by 'Western values'. The trend in Yazd is particularly consistent with this hypothesis. The other point to be noted here is that having the first birth is very important for families in Iran and couples are expected to have their first child early in their life to fulfill societal and familial expectations.

Women were asked whether they were using contraceptives before their first pregnancy. The results (Table 14) show that practice of birth control before pregnancy has changed across cohorts with younger cohorts in Gilan and Yazd being more likely to use contraceptives before their first birth than older cohorts.

Table 13 How long (in months) after marriage did you become pregnant?

Province	Marriage Cohort	Mean	Birth Cohort	Mean
Gilan	**Before 1980s**	10.0	**Before 1960s**	10.2
	1980s	8.4	**1960s**	8.0
	After 1980s	8.7	**After 1960s**	9.0
West Azarbaijan	**Before 1980s**	13.1	**Before 1960s**	12.8
	1980s	9.8	**1960s**	9.9
	After 1980s	8.7	**After 1960s**	9.3
Sistan & Baluchistan	**Before 1980s**	17.9	**Before 1960s**	17.7
	1980s	14.3	**1960s**	14.6
	After 1980s	11.3	**After 1960s**	13.5
Yazd	**Before 1980s**	9.6	**Before 1960s**	9.5
	1980s	9.4	**1960s**	8.4
	After 1980s	11.1	**After 1960s**	12.1

While this change does not seem to have had much impact on the interval from marriage to the first birth, it may be a precursor to future changes, such as a further increase in age at first marriage or, society permitting, an increase in the employment of young women. Those entering the early childbearing ages in the near future are part of the very large birth cohorts born in the early 1980s.

Table 14 Distribution of women by use of contraceptives before the first birth by marriage cohort and province, IFTS 2002

Province	Marriage Cohort	Using contraceptive before first pregnancy		
		Yes	No	Total
Gilan	Before 1976	5.1	94.9	100.0
	1976–80	3.6	96.4	100.0
	1981–85	7.3	92.7	100.0
	1986–90	7.4	92.6	100.0
	1991–95	17.2	82.8	100.0
	1996+	24.4	75.6	100.0
	Total	10.9	89.1	100.0
West Azarbaijan	Before 1976	2.7	97.3	100.0
	1976–80	1.3	98.7	100.0
	1981–85	2.2	97.8	100.0
	1986–90	8.3	91.7	100.0
	1991–95	10.9	89.1	100.0
	1996+	18.0	82.0	100.0
	Total	7.2	92.8	100.0
Sistan & Baluchistan	Before 1976	3.1	96.9	100.0
	1976–80	4.1	95.9	100.0
	1981–85	5.4	94.6	100.0
	1986–90	4.8	95.2	100.0
	1991–95	8.8	91.2	100.0
	1996+	6.1	93.9	100.0
	Total	5.5	94.5	100.0
Yazd	Before 1976	3.7	96.3	100.0
	1976–80	8.1	91.9	100.0
	1981–85	8.2	91.8	100.0
	1986–90	14.9	85.1	100.0
	1991–95	24.1	75.9	100.0
	1996+	34.9	65.1	100.0
	Total	14.6	85.4	100.0

While education levels are much higher for this cohort than for earlier cohorts, especially for women, job opportunities may be restricted because of the within-cohort competition. Competition with young men in the labour market may see the entry of young women into paid employment being more muted than it might otherwise have been. The labour market competition may also promote delayed child-bearing leading to an expectation of further falls in cross-sectional fertility rates.

It is interesting that, in Gilan and West Azarbaijan, the percentage of women who used contraceptive before the first birth declined for the marriage cohort of 1976–80 and then increased for later cohorts. This is probably due to the effects of the 1979 Revolution as explained earlier.

Fertility preferences

a) Mean ideal number of children for a couple

Table 15 shows some measures of the fertility preferences of Iranian women in the four provinces. The numbers reported to be desired at the time of marriage show an expected fall across time, however, the fall is much more muted than the actual fertility decline. This can be interpreted to mean that:

1. the older cohorts had many children that they did not want suggesting an unmet need for family planning, or

2. the older cohorts have rationalized their response to this question in the light of the subsequent fall in fertility.

Whichever meaning is taken, the older generation is expressing that the number of children that they had was too high, and this is confirmed by the fact that the numbers they give as 'too many' tend to be above the number they actually had themselves. This means that the older generation today would be supportive of the smaller family ideals of the younger generation. This is confirmed by their statement of the number of children that is most appropriate for couples today which is generally similar to that of younger cohorts. For younger cohorts (married since 1980), the average number wanted at marriage is similar to the number considered to be appropriate for couples today suggesting that, on average, couples are having the number they would like to have.

Even for the most recent marriage cohort, fertility preferences in Sistan & Baluchistan remain considerably higher than in the other three provinces suggesting that the higher fertility in that province is likely to remain evident for some time. Higher fertility in Sistan & Baluchistan should be interpreted according to the cultural and social-economic context of the province. Sistan & Baluchistan is the least developed province in the country. The majority of the people are Sunni sects of Islam who mainly speak Baluchi. Although both ethnicity and religion may have some influence on fertility, it is hard to control and separate the impact of ethnicity/religion on fertility, even using multivariate analysis. The Baluchi in Sistan & Baluchistan have a considerable degree of contact with the Baluchi in Pakistan's province of Baluchistan with cross-border marriages being common. Among Pakistan's Baluchi, however, the education level of young women remains low and family planning knowledge is not as advanced as it is across the border in Iran. Hence, the cross-border influence may keep the fertility level of Iran's Baluchi higher than it would otherwise have been as wives tend to move to the husband's household.

Table 15 Mean number of desired children at the time of marriage and at the time of survey, and mean number of children considered as too high and too low, by province and marriage cohort, IFTS 2002

Province	Marriage cohort	Number of children wanted at time of marriage	Currently appropriate number of children for a couple	How many children are too many?	How many children are too few?
Gilan	**Before 1980s**	2.9	2.0	4.5	1.4
	1980s	2.4	1.9	4.5	1.6
	After 1980s	1.9	2.0	4.1	1.4
West Azarbaijan	**Before 1980s**	3.4	2.5	4.9	1.8
	1980s	2.6	2.2	4.3	1.3
	After 1980s	2.0	2.1	4.2	1.5
Sistan & Baluchistan	**Before 1980s**	5.4	4.1	6.8	2.0
	1980s	4.4	3.2	7.0	2.7
	After 1980s	3.8	3.7	6.5	2.7
Yazd	**Before 1980s**	3.9	2.5	5.3	1.4
	1980s	3.2	2.3	5.0	1.3
	After 1980s	2.4	2.2	4.7	1.2

b) Distribution of the ideal number of children for a couple

Table 16 shows the distribution of women by their preferred ideal number of children for a couple at the time of the survey. Three main findings emerge. First, in all provinces, except in Sistan & Baluchistan, the majority of women indicated that 2 children is the ideal number for a couple today. In Sistan & Baluchistan only 40 to 45 per cent of each marriage cohort considered 2 children as ideal while 40 per cent believed that 4 children or more would be ideal for a couple. Second, there are no considerable variations in ideal family sizes across marriage cohorts, particularly in Gilan and West Azarbaijan provinces. Third, relatively high percentages of all marriage cohorts in Gilan preferred one child as the ideal number of children for a couple. This is very high for the Iranian context and, indeed, for any context, and may have implications for the future of fertility in Iran.

If women indicated one child, or two-or-more children as an ideal number of children for a couple, they were then asked the reason why they prefer *"N"* number of children as an ideal number for a couple. Respondents were given thirteen options, and were asked to identify these options according to three priorities. Women who preferred one child overwhelmingly referred to rising family costs as the main reason for preferring such a low ideal family size with quality of children as a secondary reason (results not shown here). The pattern of responses was similar for those women who thought two children was the ideal number of children for a couple with rising family costs being by far the most prominent reason for the choice of this ideal (around 60 per cent). Quality of children (measured by '*to rear children better*' and '*to provide better facilities for children*') was the other important reason expressed for indicating two children as ideal. Reasons such as child survival, parent's welfare and progress and provision of a sibling were also expressed, but by relatively small

numbers of women. For the relatively small proportions who stated four or more children as ideal, the reason that children would look after their parents in old age also emerged.

In summary, the interesting finding from this section is the ideational change in Iranian society evident by the fact that ideal family size/fertility is similar among young and older cohorts. It is also notable that even those who had higher fertility considered two children as the ideal number of children for a couple, but that in Gilan, a relatively high preference for one child has emerged. Overwhelmingly, low expressed ideals were associated with economic motivations related to the perceived costs of children.

Table 16 Ideal number of children by province and marriage cohorts, IFTS 2002

Provinces	Marriage cohorts	Ideal number of children for a couple				
		1	2	3	4+	Total
Gilan	Before 1980s	17.9	70.5	9.4	2.2	100.0
	1980s	18.5	74.3	5.2	2.0	100.0
	After 1980s	22.4	71.5	5.0	1.2	100.0
West Azarbaijan	Before 1980s	4.0	70.4	17.1	8.5	100.0
	1980s	5.7	73.0	14.9	6.4	100.0
	After 1980s	10.3	73.2	14.5	2.0	100.0
Sistan & Baluchistan	Before 1980s	2.5	39.9	14.5	43.0	100.0
	1980s	2.0	43.0	15.3	39.8	100.0
	After 1980s	3.6	46.9	11.8	37.6	100.0
Yazd	Before 1980s	2.7	60.8	23.3	13.1	100.0
	1980s	3.0	68.9	21.2	6.9	100.0
	After 1980s	7.2	73.8	14.3	4.6	100.0

Attitudes toward childbearing / value of children

Table 17 shows the distribution of women agreeing with different statements representing various (traditional vs liberal) views regarding children. In general, women in all provinces, except Sistan & Baluchistan, expressed liberal views about childbearing. For example, the majority of women disagreed with the following statements regarded as traditional values:

- *Parents should have many children for their old age time*
- *Having many children will increase family income*
- *Having many children is a good help in housekeeping*
- *Having many children does not affect their education level*
- *If people had more income they would have more children*
- *The couple's independence increases as the number of their children increases*
- *Birth control is an interference in God's affairs*
- *Parents feel alive after death when they have many children*
- *Having many children increases family and ethnic power*

On the other hand, the vast majority of women agreed with the following "liberal" statements:

- *Having many children is an obstacle for the parents' interests*
- *Having many children creates psychological stress for parents*
- *Parents cannot properly raise many children*
- *Having many children creates financial pressure for the family*

The other interesting finding is that there were not many differences between the marriage cohorts but, where there were differences, the direction was towards more liberal values among the more recent marriage cohorts. Only in Sistan & Baluchistan were conservative views expressed by relatively large numbers but, even in this province, the emphasis on liberal views was higher than on the conservative. For example, most women in Sistan & Baluchistan disagreed that 'having many children would increase the family's income'.

Consistent with the stated reasons for low fertility ideals, there was strong agreement with all statements that expressed the view that children were an economic disadvantage and strong disagreement with statements that they were an economic advantage. However, non-economic values related to small family size also received substantial agreement including those related to the level of stress upon parents, the obstacle that children present to parents pursuing their own interests and the raising of 'quality' children. The traditional views that birth control is an interference in God's affairs, that many children represent greater power for the family or the ethnic group, or that more children means 'life after death' were supported by only about one fifth of respondents in Gilan, Yazd and West Azarbaijan. Support was stronger for these statements in Sistan & Baluchistan but was still lower than 50 per cent.

The overall impression from these results is that a norm of low fertility has spread across Iran and it has been adopted by both older and younger generations. The older generation who themselves had very high fertility are now almost equal in their strong support of a low fertility norm with the younger generation. That it is the norm itself that is important is evidenced by the fact that it is explained in broad terms that cover economic, social and psychological dimensions and that relate to the impacts of high fertility on both the children and the parents. Furthermore, the expression of the norm in terms of attitudes and values is consistently interpreted across the provinces included in the survey.

Table 17 Distribution of women agreeing with various statements on childbearing and value of children by marriage cohorts and province, IFTS 2002

Province	Marriage Cohort	Agree with:												
		Parents should have many children for their aging time	Having many children is an obstacle to the parents' interests	Having many children will increase the family's income	Having many children is a good help in house keeping	Having many children creates psychological stress for parents	Parents cannot properly raise many children	Having many children does not affect their education level	Having many children creates financial pressure on the family	If people had more income, they would have more children	A couple's independence increases as the number of their children increases	Birth control is an interference in God's affairs	Parents feel alive after death when they have many children	Having many children increases family and ethnic power
Gilan	**Before 1980s**	22.7	88.9	15.0	26.7	96.1	89.7	13.6	97.5	20.2	16.0	28.6	23.9	15.9
	1980s	16.6	90.2	11.7	17.6	97.9	93.0	11.2	97.4	15.7	11.2	21.5	15.0	10.1
	After 1980s	14.3	91.3	11.7	22.8	97.4	94.0	13.1	96.4	17.3	10.2	15.6	15.7	8.6
	Total	17.4	90.3	12.6	22.3	97.2	92.5	12.7	97.0	17.6	12.1	21.2	17.8	11.2
West Azarbaijan	**Before 1980s**	25.1	85.7	18.6	31.2	94.7	88.5	17.7	97.6	16.4	17.2	27.4	27.3	29.1
	1980s	24.2	86.5	19.3	28.3	96.2	91.9	14.1	96.9	16.3	10.6	24.1	22.6	25.2
	After 1980s	19.7	86.5	18.5	26.9	96.6	93.4	15.9	97.3	14.0	12.2	18.6	20.4	20.9
	Total	22.8	86.3	18.8	28.6	95.9	91.4	15.8	97.2	15.4	13.2	23.0	23.2	24.8
Sistan & Baluchistan	**Before 1980s**	55.9	71.8	47.3	59.3	87.9	85.3	34.4	88.7	43.0	42.5	47.7	46.4	46.9
	1980s	48.3	70.2	41.9	56.3	88.0	85.3	33.8	90.6	39.1	31.3	36.4	39.3	41.7
	After 1980s	47.8	70.5	38.9	49.0	86.7	83.9	31.8	90.1	39.2	30.5	40.2	38.0	41.7
	Total	50.0	70.7	41.9	53.9	87.4	84.7	33.1	89.9	40.1	33.7	40.8	40.5	43.0
Yazd	**Before 1980s**	29.8	87.7	14.7	29.3	96.4	93.3	9.6	97.3	18.9	18.7	36.5	22.6	15.0
	1980s	25.6	82.3	14.5	21.4	93.6	93.0	12.1	97.5	18.2	15.0	31.6	19.6	13.1
	After 1980s	19.5	83.0	9.9	21.6	97.0	96.4	7.2	97.8	14.1	10.0	23.2	15.6	10.0
	Total	25.0	84.4	13.0	24.2	95.7	94.3	9.5	97.5	17.0	14.6	30.4	19.3	12.7

It is also interesting that women do not think that increased governmental financial support would encourage couples to have more children (Table 18). More than 70 per cent of women in Gilan, more than 80 per cent in West Azarbaijan and Yazd, and more than 60 per cent of women in Sistan & Baluchistan disagreed with the statement that higher government financial support would encourage families to have more children. On the other hand, they believed that government regulations and punishments for having more than two children would encourage families to control their fertility (results not shown here).

Table 18 Attitudes of women regarding governmental support to increase fertility by province and marriage cohorts, IFTS 2002

Province	Marriage cohorts	Would governmental financial support encourage couples to have more children?			
		Yes	No	Do not know	Total
Gilan	Before 1980s	20.9	75.5	3.6	100.0
	1980s	21.7	74.2	4.1	100.0
	After 1980s	24.2	72.4	3.4	100.0
West Azarbaijan	Before 1980s	12.8	83.5	3.7	100.0
	1980s	14.5	82.4	3.0	100.0
	After 1980s	15.6	82.4	2.0	100.0
Sistan & Baluchistan	Before 1980s	37.4	58.1	4.5	100.0
	1980s	35.9	60.5	3.5	100.0
	After 1980s	35.1	60.6	4.2	100.0
Yazd	Before 1980s	18.4	80.7	0.9	100.0
	1980s	16.4	83.5	0.1	100.0
	After 1980s	13.6	86.0	0.3	100.0

Gender roles

Table 19 shows the percentages of women who agreed with a range of statements about employment of women outside the home. In general, the expressed attitudes indicate much more support for the employment of women outside of the home than is actually the case at present. Again, it seems that attitudes are running ahead of behavior suggesting considerable potential for future change. Women in all four provinces were especially likely to agree that women should work for financial autonomy or to support their family financially. The economic motivation for social change is again prominent. However, except in Yazd, a majority also considered that women should work outside the home for the social participation that this would entail. Conversely, only 30–40 per cent of women agreed that ‘a woman should not work outside the home, her duty is housekeeping’ and ‘employed women cannot rear their children well’. In general, these attitudes did not vary much across provinces or across generations.

Table 19 Distribution of women agreeing with various statements about employment of women outside the home by marriage cohorts and province, IFTS 2002

Province	Marriage Cohort	Women agree with:						
		A woman should not work outside home, her duty is housekeeping	Employed women cannot rear their children very well	Employed women have less children	Women must be employed for financial autonomy	Women should not work outside home like men	Women should work outside home to support family financially	Women should work outside home for social participation
Gilan	**Before 1980s**	41.1	38.0	83.8	79.0	41.3	85.1	59.1
	1980s	31.4	28.9	73.7	73.9	39.5	84.5	53.7
	After 1980s	31.7	31.7	73.0	70.3	37.1	80.6	54.9
	Total	34.3	32.6	76.3	73.9	39.1	83.1	55.7
West Azarbaijan	**Before 1980s**	44.9	41.6	69.3	75.2	43.9	71.3	64.9
	1980s	40.4	36.9	60.1	74.1	41.5	75.1	64.7
	After 1980s	40.1	34.5	59.0	68.3	41.7	66.8	60.0
	Total	41.6	37.4	62.4	72.3	42.3	70.9	63.0
Sistan & Baluchistan	**Before 1980s**	42.1	45.4	78.6	76.7	39.9	73.8	63.6
	1980s	36.0	35.7	73.5	74.6	34.3	69.2	62.8
	After 1980s	37.8	35.8	70.1	67.0	39.2	68.3	60.6
	Total	38.3	38.1	73.3	71.9	37.8	70.0	62.1
Yazd	**Before 1980s**	40.8	44.3	80.2	75.8	48.4	66.3	48.4
	1980s	33.0	38.3	69.1	70.4	42.1	59.1	45.1
	After 1980s	22.8	30.8	61.8	66.2	31.0	68.2	45.1
	Total	32.2	37.8	70.4	70.8	40.4	64.7	46.2

Other data from IFTS (results not shown here) show that decisions within marriage about purchase of food, household equipment or gold/jewels tend to be cooperative decisions of the husband and the wife and that the cooperative model is more prominent among the more recent marriage cohorts than among earlier cohorts. Respondents were also asked if they had ever been beaten by their husbands[6]. Again, across marriage cohorts from older to younger, there was a considerable shift away from women reporting that they had been beaten. There was also a shift away from women reporting that they had a 'general fear' of their husband. All of these changes can be interpreted as indicating an increase in the level of gender equity in couple relationships within the family. Other questions that were more related to the external role of women, especially questions related to the woman's freedom of movement outside the household, showed less change across the generations. Nevertheless, among the most recent marriage cohort, only 35–40 per cent of married women in Gilan and Yazd say that they must ask their husband's permission before going to a health center or doctor, and

[6] The question by asking 'ever' would be answered in the affirmative by women who had had only one experience during their marriage. The impression gained from the responses may tend therefore to exaggerate the incidence of violence within marriage. Nevertheless, there were substantial falls in the reported incidence from older to younger cohorts as would be expected if levels of gender equity were improving in association with increased levels of education.

only 14 per cent (Gilan) and 33 per cent (Yazd) are actually accompanied when they go to the health center or to the doctor. Results for these measures of freedom of movement were much more conservative for West Azerbaijan and Sistan & Baluchistan.

Conclusion and discussion

This paper was set up to examine family change and its impacts on fertility decline in Iran. Various data sources such as the 1986 and 1996 Censuses as well as the IDHS were used to estimate the level and trends of fertility over the last three decades in Iran. We also use data from the Iran Fertility Transition Survey conducted in 2002 to deepen our understanding on the fall of fertility in Iran.

The results showed that the Islamic Republic of Iran has experienced a phenomenal fertility decline in recent years. The Total Fertility Rate (TFR) has declined from around 7.0 births per woman in 1979 at the time of the Revolution to around 2.1 in 2000. The fertility decline has been pervasive and observed in all provinces and rural and urban areas of Iran. Age at marriage has risen in recent years, and has clearly depressed fertility. However, the impact of nuptiality change was relatively low as only 15 percent of the change of fertility from 1985 to 1996 was explained by nuptiality. Thus, the task of explanation of the substantial decline in fertility in Iran and in each of the four provinces becomes largely a question of why fertility within marriage has fallen. Clearly, a very substantial increase in the use of fertility control methods has been the immediate cause of the decline of fertility in marriage especially in the 1990s. However, the commencement of the fertility decline preceded the re-establishment of the nation's family planning program in 1989. This gives rise to the hypothesis that social and economic change and associated changes in attitudes and values may have precipitated the fall in fertility and increased the demand for family planning services. This paper provides a preliminary assessment of the association between the fertility trend and the transformation of attitudes and values toward family and fertility.

Different periods of social change represented by the three time periods of marriage were used to study these changes in Iran. During the period prior to the 1980s, the first national family planning program was implemented by the Shah, the legal minimum age at marriage for boys and girls was increased, and various programs were implemented to improve the status of women in the society. During the 1980s, the first decade following the Islamic revolution, the country experienced a phenomenal socio-political change. This was also the period of the Iran-Iraq War and the suspension of the family planning program. On the other hand, the egalitarian nature of the revolution led to considerable improvements in education and health systems, and there were major changes in rural areas of Iran. The third period covers the 1990s. During this period the country experienced a more pragmatic approach to social and economic issues and the family planning program was revived. The election of the Khatami Government in 1997 heralded a period of democratization when various political groups formed and the society experienced profound shifts on political issues.

The result has been a complex mosaic of individual and family change and persistence in the various provinces. The most important individual change in recent decades is the increased level of education across cohorts stimulated by the egalitarian nature of the revolution.

There was a significant shift from illiteracy and low levels of education among older cohorts towards much higher levels of education for younger cohorts in all of the provinces under scrutiny. Education brings with it the confidence to hold and express one's own views and increased ability to engage with the modern world and its ideas. There would seem to be little argument that the more liberal attitudes and values expressed by women in the IFTS study were related to this trend in education levels. Nevertheless, in most cases, women from the older generations also expressed relatively liberal values and attitudes to questions about numbers of children. Thus, it has to be argued that a pervasive low fertility norm has swept Iran taking with it all generations and all provinces. There remain differences between provinces but the strong expectation is that provincial differences will diminish and this is already evident in recent fertility trends. Economic motivations for changed values in relation to numbers of children or to work of women outside the home were very strongly expressed everywhere. Thus, there is strong support for the hypothesis that fertility decline has been driven by a desire for economic improvement at the household level perhaps with a reduced capacity to achieve this end. What is all the more interesting is the notion that this economic motivation arose at the heart of the early years of the Islamic revolution. The egalitarian nature of the revolution and its concern with the improvement of health services, education and living standards for all appears to have engendered economic aspirations and value changes that extended beyond the immediate aims of the revolution.

At the level of the family, several dimensions of family life have remained fairly constant, while others have changed dramatically. Fertility behavior and attitudes of women have changed across birth and marriage cohorts over the last two decades. The ideal number of children has declined considerably across cohorts and in all provinces, even among those older cohorts who have had higher fertility. A preference for two children is common in all provinces. The emergence of 'one child' as an ideal number of children for couples in Gilan is very interesting and has many policy implications for the future of fertility in Iran. The timing of marriage has also shifted towards higher ages, particularly for girls. There is considerable shift in women's attitudes towards girl's marriage, as women of all cohorts prefer their daughters (or girls in general) to continue their education rather than marrying earlier.

Change within the family has tended to be stronger at the level of the individual couple. This includes decisions about the numbers of children that they have and attitudes about gender roles within the couple relationship. As attention shifts from the internal or intimate to the external or public aspects of family, change becomes more muted. Marriage with relatives remains common and there has been little change across time. Married women still lead relatively restricted lives and are still largely 'subject' to their husbands in their public lives, and actual participation in work outside of the home remains low. However, in all of these public dimensions of family, attitudes have shifted and are running ahead of behavior. Change in the external dimensions of the institution of the family remains relatively constrained because of its public nature; at the private or intimate level, change has been more possible.

In summary, fertility decline in Iran appears to have been driven by rising economic aspirations leading to the inculcation across Iran of a small family size norm. The rapid fall of fertility was then facilitated by increased levels of education, greater gender equity within the husband-wife relationship and by the provision by the Iranian Government of affordable and reliable access to family planning through the country's extensive public health system. This is a preliminary investigation of factors that may have been associated with the fertility decline in Iran. Clearly, a more thorough, multivariate analysis will be required subsequent to the findings of this paper.

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