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Female Age at Marriage in India : Trends and Determinants

N. P. Das and Devamoni Dey

Introduction

NUPTIALITY plays a significant role in determining the level of fertility and growth rate in a population. The experience of several less developed countries where population growth rates have recently lowered has well demonstrated this effect. An upward shift in nuptiality behaviour has played a crucial role in affecting these changes. In societies where reproduction is primarily confined within marriage the changes in marriage ages and the resultant reduction in proportion of women remaining in married state are directly linked to fertility. Raising of female age at marriage has therefore been recognized as one of the important policy interventions that might be able to influence population growth rates apart from national family planning programme.

Historically also changes in nuptiality pattern have played very significant roles in many of the European demographic transitions (Van de Walle, 1972). In Western Europe late marriage and wide spread celibacy have been the main mechanisms through which its fertility was brought to a low level. However, in other parts of Europe (eastern and central), marriages generally occurred early, and were also nearly universal and decline in fertility was achieved mainly through reduction in marital fertility. However, changes in marriage pattern in terms of higher age at marriage and lower proportion ever married at different ages has characterized several early demographic transitions in many other developed countries (Coale, 1974; Hajnal, 1965; Coale and Tye, 1961). As per Matra's (1965) classification, shift towards late marriage is characteristic of a mid transitional stage in the course of fertility decline ever occurred among nations. Confirming to this, Coale's (1974) analysis revealed that in the initial phase of demographic transition early and universal marriage prevailed which slowly paved the way to later marriage and fairly common spinsterhood and then finally to a decline in marital fertility.

Evidences are on the rise in recent years too, to support the argument that nuptiality reductions produce a retarding effect on fertility. Analysing the data from several Asian countries, Cho and Retherford (1976), demonstrated that marital factors have contributed substantially towards the reduction of fertility in

these countries. In West Malasia about two thirds of its decline in crude birth rate during the sixties has been attributed to change in the marital structure. The significant decline in CBR of Sri Lanka was also partly due to changes in age at marriage. Jones (1978) also provides several examples from South-East Asia where rising age at marriage has played an important role in major fertility declines. Lestheghe (1971) analysed the impact of nuptiality on fertility and growth rates of a series of populations from developing nations where extra marital fertility was negligible and found that nuptiality changes can produce the same effect on birth and growth rates as changes in marital fertility. The study concluded that an overall fertility reduction initiated by decreasing marital fertility alone would fall considerably short of the targets in several developing nations. Apart from family size being reduced through reduced exposure to pregnancy risk (Baldwin, 1971), the delayed marriage can lead to significant decline in birth rates through its effect on length of generation (Coale and Tye, 1961). According to Ridley and Sheps (1966) age at marriage affects fertility by changing the fertility schedule and family building pattern. Thus due to its combined effect through several routes, age at marriage can be termed the best single predictor of fertility.

In India, one of the important factors responsible for the present high population growth is the presistence of markedly low level of age at marriage in many of the India states. Age at marriage has become the focus of attention of scholars and policy makers because early and universal marriage is believed to contribute to high fertility levels. Despite apparently vigorous efforts, including legislation prohibiting child marriages, the bulk of marriages in India continue to be performed at ages much below the desired. The latest amendment to the Child Marriage Restraint Act, 1978 has laid down the minimum age at marriage for females in India as 18 years. Yet, even today the mean age at marriage continues to remain much below this legally prescribed minimum in several states. In order to deal effectively with the most urgent task of slowing down of India's population growth rate as well as achieve socioeconomic uplift of women, it is imperative to have changes in the existing marital behaviour, and encourage late marriages because marriage spells a cessation of education for girls and premature assumption of domestic and child care responsibilities.

In India the impact of persisting low ages at marriage in maintaining the high fertility and high growth rate of Indian population is now well recognized. Though age at marriage of females in India has been rising slowly since around the middle of this century the current level is low in comparison to most of the low fertility countries. Further there is lot of variation in the age at marriage among the states especially between the northern and southern states, and within states among castes, communities and across other social stratifications.

It is well known that directly implementing the law and legislation may not be feasible, in several of the backward states (especially in female education) rather government can approach through only factors that are amenable to social intervention. In this context it is important to know the recent changes in the differing nuptiality pattern in various states of India and identify and assess the causal factors that are associated with or contribute to maintaining the low level of female age at marriage in the Indian states. The present paper is an attempt in this direction and it tries to analyse levels, patterns and trends in the age at marriage in major states of India and in the country as a whole during the latter half of this century.

Data

Usually the data on age at marriage is derived from marriage registration records. However, in the absence of adequate data on this aspect in India, information on age, sex and marital distribution obtained from the censuses has been used for the study of nuptiality. The data of National Family Health Survey (NFHS) which was conducted in India during 1992-93 and covered 24 states has become another important source of information for the study of changes in nuptiality pattern among states in India on a comparable basis.

Trends in Nuptiality at the National Level

Singulate Mean Age at Marriage

Traditionally social and cultural factors have tended to support early as well as universal marriage for girls in India. The average age at marriage of females in India was too low at 12.5 years during 1921-31 (Agarwala, 1962). After the Child Marriage Restraint Act, 1928 although there had been a slow upward shift in female age at marriage, it was not until after 1951 that the marriage age of female was reported to be about 15.6 years for India during 1951 census. As per the census information the two decades 1961-71 and 1971-81 recorded larger increases in female age at marriage at the national level as compared to earlier decades. This is evident from Table 1 which presents the singulate mean age at marriage (SMAM) for females in India for different census years. Since SMAM values are calculated from age specific proportions never married in various age groups from 15 - 19 through 45 - 49 (Hajnal, 1965), it gives a description of the marriage pattern for comparison over time.

Table 1: Singulate Mean Age at Marriage of Females in India, 1961-1993

Census year	Singulate Mean Age at Marriage for Females		
	Rural	Urban	Total
1961	15.7	17.9	16.1
1971	16.7	19.2	17.2
1981	17.8	20.1	18.4
1991	18.7	20.7	19.3
1992-93	19.3	21.5	20.0
(NFHS)			

Source: Computed from census data for the period 1961-91, India (1995) and the estimates for the year 1992-93 is from NFHS (Office of the Registrar General Commissioner, 1967; 1976; 1987; 1997)

It can be seen that the female age at marriage rose from 16.1 years in 1961 to 17.2 years in 1971, 18.4 years in 1981 and to 19.3 in 1991. There has been a consistent increase in the age at marriage. However, the decade 1981-91 registered a lower rise in age at marriage. The recently concluded National Family Health Survey (NFHS, 1995) recorded a slightly higher SMAM of 20 years for India during 1992-93. The SMAM based on 1991 SRS data (Office of R.G. 1994) was 20.1 and this also shows substantial improvement during the eighties.

As for the comparable rural urban trend during 1961-71 the increase in female age at marriage was larger in urban areas (1.3 years) than in rural areas (1.0 year) whereas during 1971-81 and 1981-91 the increase was higher in rural areas (1.1 years and 0.9 year respectively) as compared to urban (0.9 year and 0.6 year). This seems to mark a reversal of the process of widening rural-urban gap in female age at marriage in India. However, as per the recent NFHS data (1992-93) the rural urban gap in female SMAM is about 2.2 years which is almost close to that obtained from 1991 census data (2 years), indicating thereby that in spite of the rise in age at marriage a wide gap still persists between the rural and urban areas of the country. Nevertheless there seems to have started a definite trend towards rising female age at marriage.

Proportion Never Married

As age at marriage increases the proportions of currently married females in the early ages tend to decline. In India, the proportion of ever married females in the younger age group (ages below 20 years) have considerably declined during the past two decades, as can be seen from Table 2 which presents the changes in the percentage of single females in different age groups in India since 1961.

Table 2: Percentage of Female Population Single by Age Groups, India, 1961-93

Census years					
Age group	1961	1971	1981	1991	NFHS (1992-93)
10-14	80.5	88.2	93.3		
15-19	29.2	43.7	55.8	64.3	60.7
20-24	6.0	9.5	14.0	17.0	18.5
25-29	1.9	2.3	3.3	4.2	4.7
30-34	1.0	1.0	1.2	1.8	1.7
35-39	0.7	0.8	0.6	0.9	0.9

Source: Computed from census data for the period 1961-91, India (1995) and the estimate for the year 1992-93 is from NFHS (Office of Register General and Census Commissioner, 1967; 1976; 1987; 1997)

The Table indicates increased singlehood in all the young age groups but, especially among the teenagers (under 20 years) in India. Between 1961-91 the percentage of single women in the age group 15-19 rose from 29 percent to 64 per cent. In India the characteristic of universality of marriage among females still persists which is borne out from the fact that hardly 1 percent of the females remain in single status beyond the age of 34 years.

Proportion Widowed/Divorced/Separated

The pattern of marital dissolution through death of spouse and divorce/separation can be studied through Table 3, which compares the data on widowhood, divorced/separated females in India at various censuses.

Table 3: Percentage of Widowed and Divorce/Separated Females in India, 1961-91

Age group	Percentage of females							
	Widowed				Divorced/Separated			
	1961	1971	1981	1991	1961	1971	1981	1991
15-19	0.53	0.33	0.21	0.18	0.64	0.44	0.43	0.26
20-24	1.30	0.88	0.68	0.59	0.89	0.71	0.83	0.60
25-29	2.89	1.94	1.48	1.15	0.97	0.76	0.89	0.70
30-34	6.42	4.09	3.08	2.32	1.04	0.79	0.88	0.76
35-39	11.15	7.03	5.36	3.94	1.03	0.80	0.78	0.70
40-44	20.66	14.38	10.81	7.71	0.99	0.80	0.78	0.67
45-49	28.84	20.63	15.73	11.16	0.87	0.78	0.68	0.55

Source: Computed from census data for the period 1961-91, India (1995) and the estimate for the year 1992-93 is from NFHS (Office of Registrar General and Census Commissioner, 1967; 1976; 1987; 1997)

As is evident from Table 3, the incidence of widowhood has reduced substantially over time in all the age groups. According to the 1961 census in the age group 45-49 around 29 percent women were widows which has thereafter reduced to about 11 percent in 1991. Such an incidence is less than 1 percent in the younger age groups (< 25 years). The lower proportion of widows at younger ages may partly be due to lower mortality and partly due to greater likelihood of widows remarrying in the younger age groups (Agarwala, 1985). The proportion divorced and separated together were less than 1 percent in all the age groups in 1991 census, which has not shown any major change during the last three decades, indicating that the marriage is still comparatively stable in India.

Early Marriages

Another approach for analysing the changes in nuptiality is to compare the percentage of married women by a specified exact age say 15 years, or legally prescribed minimum of 18, between different cohorts at a time of point or between same age groups of women at different censuses.

The recent NFHS survey data on these aspects are summarised in Table 4 to assess the changes in nuptiality pattern. It can be seen from Table 4 that among the rural women aged 40-44 at the time of survey about 48 percent were married by age 15, but in the younger cohort of 20-24 years only 32 percent of women were married. Similar differences can be noted between the same cohorts in the case of proportion of females married by the legally prescribed minimum age of 18 years, the corresponding figures being 80 and 63 percent respectively. A similar trend is visible in the case of urban women. The overall trend seems to suggest a shift in the age at marriage in the country and the incidence of marrying at early ages (below 18 years) has reduced over a period of time, although a significant proportion still get married at their teen ages. For example, the recent NFHS data as presented in Table 4 reveals that more than half of the women (54 percent) aged 20-24 years got married before the legally prescribed minimum age of 18 years.

Table 4: Percentage of Females Married by Exact Age 15 and the Minimum Legal Age by Current Age and Residence, India, 1992-93

Current age	Rural		Urban		Total	
	By age 15	By age 18	By age 15	By age 18	By age 15	By age 18
15-19	21.3	--	6.5	--	17.0	--

20-24	32.0	62.8	10.9	32.6	26.1	54.2
25-29	38.0	71.2	16.1	40.9	31.8	62.6
30-34	41.5	74.6	16.9	46.2	34.2	66.2
35-39	44.9	77.8	20.8	51.9	37.6	70.0
40-44	47.6	79.8	25.6	56.1	40.8	72.4
45-49	51.6	80.8	27.9	59.2	45.1	75.0

Source: NFHS, India, 1992-93 (1995)

Thus using different indicators for the study of levels and trends at the national level, it is evident that there has been a substantial increase in the age at marriage of females in India.

Trends in Nuptiality at the State Level

There are large state variations in age at marriage in India. This can be seen from Table 5, which presents the female singulate mean age at marriage (SMAM) computed from 1961, 1971, 1981 and 1991 for all the major states of India (those with a population of more than 5 million in 1991). The female age at marriage is lowest in Rajasthan (17.5) followed closely by the states of Madhya Pradesh and Bihar (17.8 and 17.6 years) in 1991. All other states have reached an average age at marriage of females higher than the legally prescribed minimum of 18 years. The singulate mean age is higher than 20 years in Kerala, Assam, Punjab, Orissa, Tamil Nadu, Karnataka, Himachal Pradesh and Haryana.

Table 5: Singulate Mean Age at Marriage for Female by States, India, 1961-1991

State/Region	Singulate mean age at marriage			
	1961	1971	1981	1991
<i>North</i>	--	17.7	17.9	20.3
Haryana	15.6	17.8	19.1	20.3
Himachal Pradesh	16.1	17.8	19.7	--
Jammu & Kashmir	17.5	20.1	21.1	21.0
Punjab	14.2	15.1	16.1	17.5
Rajasthan				
<i>Central</i>	13.9	15.0	16.6	17.8
Madhya Pradesh	14.5	15.5	16.7	18.1
Uttar Pradesh				
<i>East</i>	18.6	18.7	--	21.1
Assam	14.3	15.3	16.6	17.6
Bihar	16.4	17.3	19.1	20.2
Orissa	15.9	18.0	19.3	19.7
West Bengal				
<i>West</i>	17.1	18.5	19.6	19.9
Gujarat	15.8	17.6	18.8	19.7

Maharashtra				
<i>South</i>	15.2	16.3	17.3	18.3
Andhra Pradesh	16.4	17.9	19.3	20.1
Karnataka	20.2	21.3	22.1	22.3
Kerala	18.4	19.6	20.3	20.9
Tamil Nadu				

Source: Computed from census data for the period 1961-91, India (1995) and the estimate for the year 1992-93 is from NFHS (Office of Registrar General and Census Commissioner, 1967; 1976; 1987; 1997)

(--) indicates information not available.

More detailed information from the NFHS on female age at marriage is shown in Table 6 which shows the percentage of women aged 20-24 and 40-44 who were ever married by specified exact age in different states. Table 6 shows a clear trend toward rising age at marriage with large declines in marriages at very young ages in several states. However, more substantial changes have been noticed only in a few states. The proportion of females marrying before age 15 in the rural areas declined from 54 percent in the older cohort (40-44 age group) to 28 percent in the younger cohort (20-24 age group) for the state of West Bengal, from 33 percent to 6 percent for the Jammu region of Jammu & Kashmir from 59 percent to 38 percent for Maharashtra and from 35 percent to 14 percent for Orissa. The proportions marrying at early ages are already low for all states like Kerala, Tamil Nadu and Punjab. In the states like Rajasthan, Bihar, Uttar Pradesh, Andhra Pradesh and Madhya Pradesh where marriage at very young adolescent ages were much common, the decline in the proportions were found to be moderate (by 13 to 21 percent points), although the urban areas of these states have shown a significant decline in the proportion of females marrying before age 15.

Table 6: Percent of Women Ever Married Before Age 15 in Two Different Cohorts in Rural and Urban Areas by State, India, 1992-93

State Region	Percent of women ever married before age 15			
	Rural		Urban	
	20-24	40-44	20-24	40-44
<i>North</i>	20.2(65.4)*	42.1	16.8(54.4)	25.0
Haryana	4.7(25.4)	23.8	1.2(12.2)	14.4
Himachal Pradesh	5.7(23.6)	32.6	1.7(7.3)	16.5
Jammu & Kashmir	1.9(15.7)	6.2	3.0(12.5)	6.0
Punjab	41.4(77.0)	54.7	21.8(42.4)	33.0
Rajasthan				
<i>Central</i>	52.3(82.8)	68.7	19.7(42.7)	42.3
Madhya Pradesh	42.5(73.3)	61.1	9.5(30.5)	22.3

Uttar Pradesh				
<i>East</i>	21.0(46.4)	34.5	14.8(31.0)	19.3
Assam	43.6(73.8)	65.3	16.9(44.2)	40.1
Bihar	13.6(48.0)	35.0	8.7(32.5)	24.0
Orissa	27.7(64.1)	54.3	15.8(34.6)	33.7
West Bengal				
<i>West</i>	13.7(40.6)	20.8	5.3(20.6)	13.2
Gujarat	37.6(70.8)	58.5	9.7(35.3)	29.4
Maharashtra				
<i>South</i>	45.7(77.8)	59.9	14.2(44.2)	34.6
Andhra Pradesh	28.4(59.0)	41.7	12.1(35.9)	23.5
Karnataka	4.0(20.7)	9.0	0.09(16.0)	4.4
Kerala	9.1(42.2)	20.7	4.5(26.2)	20.3
Tamil Nadu				

Source: NFHS India, 1992-93 (1995)

- Figures within parenthesis indicate the percent of women aged 20-24 married before age 18 years.

When the proportion of females who got married before age 18 (legally prescribed minimum age at marriage for females) by state is examined, a more or less similar pattern is indicated (Table 6). As expected the incidence of early marriages is much higher in rural areas than in urban areas. In the rural areas of Madhya Pradesh, Uttar Pradesh, Bihar, Rajasthan, Maharashtra, and Andhra Pradesh more than 70 percent of the females aged 20-24 years are ever married by age 18 years, as against the states like Haryana, Orissa, Assam, West Bengal, Karnataka, Gujarat and Tamil Nadu which are relatively better placed which placed but yet more than 40 percent of the females aged 20-24 in these states get married before attaining 18 years of age. Only a few states like Kerala, Punjab, Himachal Pradesh and the Jammu region of Jammu and Kashmir are found to be more homogenous in terms of lower incidences of marriage (25 percent or less) at younger ages. Both in rural and urban areas of these states early marriages are waning away.

Nuptiality Transition in Indian States : An Assessment Through Coale's Nuptiality Model

In the earlier sections we examined the proportions single at different ages and the singulate mean age at marriage over the last three decades. It has revealed that marriage patterns are in a state of flux in many of the states in India. In a few states it is intermediate, between a much earlier pattern characterising much of the third world and a later age at marriage characteristic of much of Europe. Data on the whole appear to point to some increase in age at marriage in all the states, but still nearly universal marriage among women persists as a cultural

characteristic of Indian nuptiality. The relatively low proportion still single by age 45-49 among women is more typical of less developed countries than of western nations. This implies that the intensity of marriage has remained somewhat unchanged in almost all states.

In any case, classical indices characterizing nuptiality schedules such as mean age at marriage yield rather incomplete information, because they specify neither the age at which nuptiality starts nor do they provide clues as to how the nuptiality schedules proceed (tempo of marriage). Coale's (1971) nuptiality parameters a and k are therefore useful in the study of different patterns of nuptiality transitions and their relation with fertility. Here a refers to the age at which a 'consequential' (substantial) number of first marriages begin to occur in a population and k is the number of years in the standard schedule into which one year of marriage in the actual population may be packed and therefore represents the rate of marriage relative to the standard schedule adopted by Coale (1971). In other words, k refers to the speed at which marriage takes place. Table 7 presents Coale's nuptiality parameters a_0 , k calculated for various states in India for different census years. It can be observed from the Table that in 1971 the starting age at marriage was very low in all the Indian states, with the exception of Kerala (15.9), Assam (15.0) and Punjab (14.2). However, during the decade 1971-81 several states experienced a rise in age at marriage. The rise was maximum in Tamil Nadu with a rise in a_0 by 5.1 years followed by Gujarat (3.8 years). As regards the other states, Andhra Pradesh, Karnataka, Maharashtra and Jammu & Kashmir had an absolute increase in a_0 value in the range of 2.0-2.8 years during 1971-81. While Kerala, with its exceptional stand of relatively higher age at marriage to start with even before 1971, did not show any radical shift in the origin of the nuptiality schedule, it is worth noting that the backward states like Uttar Pradesh, Madhya Pradesh, Bihar and Rajasthan also remained in their earlier position with a very low increase in a_0 (less than one year).

Table 7: State-wise Estimates of Coale's Nuptiality Parameters (a_0 , K) for Ever Married Women in India, 1971-91

State/Region	a_0 value			K value		
	Census years			Census years		
	1971	1981	1991	1971	1981	1991
<i>North</i>	--	10.0	14.5	--	0.86	0.38
Haryana	11.0	11.8	15.7	0.68	0.82	0.40
Himachal Pradesh	11.0	13.7	--	0.68	0.54	--
Jammu & Kashmir	14.2	13.6	15.7	0.54	0.55	0.48
Punjab	12.0	12.4	13.1	0.34	0.39	0.38
Rajasthan						
<i>Central</i>	10.9	11.7	13.3	0.40	0.45	0.40
Madhya Pradesh	11.8	12.5	13.5	0.44	0.60	0.39

Uttar Pradesh						
<i>East</i>	15.0	--	15.0	0.38	--	0.52
Assam	11.0	10.3	10.6	0.44	0.60	0.66
Bihar	12.0	15.0	15.0	0.48	0.42	0.42
Orissa	11.0	12.3	13.2	0.61	0.60	0.54
West Bengal						
<i>West</i>	10.7	14.5	15.0	0.90	0.44	0.42
Gujarat	10.6	13.4	15.0	0.67	0.47	0.40
Maharashtra						
<i>South</i>	10.3	12.5	13.0	0.55	0.42	0.46
Andhra Pradesh	10.2	12.2	12.5	0.77	0.65	0.73
Karnataka	15.9	15.5	15.5	0.46	0.32	0.60
Kerala	10.4	15.5	14.3	0.38	0.32	0.56
Tamil Nadu						

Source: Computed from census data for the period 1961-91, India (1995) and the estimate for the year 1992-93 is from NFHS (Office of Registrar General and Census Commissioner, 1967; 1976; 1987; 1997).

(--) indicates information not available.

However during the decade 1981-91, Uttar Pradesh and Madhya Pradesh registered an increase in a_0 by 1-1.6 years, while a_0 values of Rajasthan and Bihar suggest only a modest increase (0.7 and 0.3 years respectively). The states which have progressed well during 1981-91 were Himachal Pradesh, and Punjab (3.9 and 2 years rise in a_0 value).

Table 7 also presents the value of k for all the major state of India during 1971-91 which indicates the spread in age at first marriage or the tempo of first marriages relative to the standard nuptiality schedule accepted. Interpreting in terms of this index it can be seen that states which are socio-economically backward like Uttar Pradesh, Madhya Pradesh, Bihar and Rajasthan during the early 70s, had a relatively smaller spread (k value 0.34-0.44) than all other states (k value 0.5) as a characteristic distinguishing their nuptiality patterns. Probably due to the forward shift in a_0 value (rise in a_0) in 1981 and 1991 in the states of Gujarat, Maharashtra, and Andhra Pradesh the k value had slightly fallen (in the range of 0.40 to 0.47). On the other hand, it is noteworthy that over the two decadal span (1971-1991) there has been an increase in k value (greater spread of marriage) in the two states of Uttar Pradesh and Bihar (0.60-0.66). However, in the case of Bihar, since the a_0 value shown in the Table 7, suggests an inhibiting effect in the beginning of the nuptiality schedule (a_0 almost stable over the two decades), the increase in marriage spread as indicated by a higher k value in 1981 and 1991 (0.60 and 0.66 respectively) might be due to the changes in marital structure at the later end of the nuptiality schedule or due to error in reporting age at marriage in a backward state like Bihar.

On the whole, looking at the relative position of various states on the given parameters a_0 , and k in 1991 the states have been classified according to the progress made toward nuptiality transition. It is evident from (Table 8) that there are four distinct group of states in terms of their marriage pattern. Kerala and Assam are the only states which have sufficiently progressed in the nuptiality transition, with a higher start at age at marriage of females and a better spread of marriage extending to relatively higher ages.

Table 8: Nuptiality Transition in India: Classification of States Based on Coale's Nuptiality Parameters

Timing of marriage (a_0 value)	Pace of marriage (k value)	
	Relatively low marriage spread $K < .5$	Relative better marriage spread $K \geq .5$
Relatively high age at start of	Haryana, Rajasthan, Madhya Pradesh, Uttar Pradesh, Andhra Pradesh	Bihar, West Bengal, Karnataka, Tamil Nadu
Relatively high age at start of marriage $a_0 > 15$ years	Himachal Pradesh, Punjab, Orissa, Gujarat, Maharashtra	Kerala, Assam

Source: Derived from 1991 census data (Office of R.G. and Census Commissioner, 1997) presented in Table 7.

In the second group of states comprising Punjab, Gujarat, Maharashtra, Orissa and Himachal Pradesh, the progression towards a late age at marriage seems to have occurred, whereas sufficient spread towards a late end of marriage schedule seems yet to be attained. As against these trends, in the states of West Bengal, Karnataka, Tamil Nadu and Bihar a major transition has to occur for the younger ages towards raising the minimum female age at marriage of the substantially high proportion of child marriages that are occurring around the age of 12-14 years. Lastly, the states least progressed towards a nuptiality transition in India seem to be Rajasthan, Madhya Pradesh, Uttar Pradesh and Andhra Pradesh where favourable changes have to occur both in the value of a_0 and k , that is, in terms of timing and pace of marriage. To this least progressed group of states, Bihar is to be added from the third group of states because of its extremely low a_0 value which helped to increase its k value, as mentioned earlier. Similarly, Assam also seems to be a misfit in the first group of states along test with Kerala as it resembles more the characteristics of the intermediate group of states that have progressed moderately in the nuptiality transition. Thus, all the major states of India could be broadly classified into three groups, after combining the second and third, in terms of their progress towards nuptiality transition. Kerala is the only state in the first group and the states like Rajasthan, Uttar Pradesh, Madhya Pradesh, Andhra Pradesh and Bihar which have

progressed least, form the third group, while the remaining major states which are in the intermediate categories, form the second group.

Effect of Nuptiality Changes on Fertility Decline at The State Level

Although assessing the effect of nuptiality changes on the level of fertility is beyond the scope of this paper, it is of interest to gauge its likely effect on fertility in various states as well as in the country as a whole. It is no doubt true that in a country like India, major decline in fertility is expected out of changes in marital fertility rather than from nuptiality changes but it is well known that changes in marital behaviour can produce a ripple effect on the fertility decline through causing changes in marital fertility as well. In this regard, it is interesting to note that states like Kerala and Tamil Nadu which have sufficiently progressed in the nuptiality transition are also the ones that lead in the fertility transition in the country, total fertility rate (TFR) being in the range of 2.0-2.5 births per woman. On the other hand, the states like Uttar Pradesh, Bihar, Rajasthan and Madhya Pradesh which have progressed least in the nuptiality transition, are also found to have progressed least in the fertility transition, the level of TFR being in the range of 3.6 to 4.8. In this context, a differential effect of nuptiality changes on fertility is expected in the states and this is reflected in our analysis of effect of variations in proportion married on observed fertility. The effect of marriage pattern of respective states can also be seen from the average amount of time spent in married state. For example, in Kerala, women on an average are married for only about two thirds of their reproductive lives as against almost nine tenths of their reproductive years being spent in marriage in Madhya Pradesh (Refer Appendix Table 1).

Appendix Table 1: Average of Percentages of Currently Married Females in the Age Group 15-49, Index of Marriage and Observed TFR by State in India, 1992-93

State/Region	Average percentage of reproductive year (15-49) in married state *	Observed TFR	Index of marriage (Cm)
<i>North</i>	85.9	3.99	0.8174
Haryana	78.9	2.97	0.6739
Himachal Pradesh	77.2	3.13	0.6288
Jammu & Kashmir	77.9	2.92	0.6345
Punjab	85.8	3.63	0.8322
Rajasthan			
<i>Central</i>	88.3	3.90	0.8688
Madhya Pradesh	85.2	4.82	0.8372
Uttar Pradesh			
<i>East</i>	85.7	3.53	0.6761
Assam	78.1	4.00	0.8526

Bihar	78.8	2.92	0.7075
Orissa	71.7	2.92	0.7625
West Bengal			
<i>West</i>	79.2	2.99	0.6874
Gujarat	80.1	2.86	0.7220
Maharashtra			
<i>South</i>	82.4	2.59	0.8630
Andhra Pradesh	77.1	2.85	0.7511
Karnataka	69.6	2.00	0.5192
Kerala	75.9	2.48	0.6790
Tamil Nadu			

Source: Computed from NFHS, India 1992-93 (1995), Das et al., 1996.

* estimated as average of age specific percentages of females currently married.

The relative effect of proportion married on fertility at the state level is studied through Bongaart's (1980) multiplicative model. In Bongaart's model the impact of four principal proximate determinants (proportion married, contraception, abortion and post-partum infecundability) are measured through four indexes (Cm, Ca, Cc and Ci), each of which range from 0 and 1 indicating the proportionate reduction in fertility that it cause's (index value 1, representing no fertility inhibition and index value 0 representing complete inhibition of fertility). As long as reasonable estimates of these indexes are possible through survey data (because index can be estimated from a series of reproductive measures) the model is useful in providing the orders of magnitudes for the extent to which a proximate inhibits fertility.

Using NFHS (1992-93) data the four index value in Bongaart's model have been estimated for all major states in India, the results have been applied to compare the relative importance of these indexes in effecting fertility declines in the states (Das et al., 1996). However, for the present section since the impact of nuptiality changes on fertility only is relevant the index of proportion married (Cm = TFR/TMER) for all the major states are discussed here. Our calculations show the Cm index to be the lowest for Kerala at 52, implying that the marital structure of the state alone reduces the total fecundity of the state by a half (Refer Appendix Table 1). For states like Tamil Nadu, Karnataka, Gujarat, Maharashtra, West Bengal, Orissa, Punjab, Assam, Jammu, and Himachal Pradesh, Cm values were moderately large (.63-.76), indicating that about one third (maximum) of the potential fertility in these states has been inhibited through marriage postponement. However the Cm index was very large (.82-.87) for the states of Bihar, Rajasthan, Uttar Pradesh, Madhya Pradesh and Andhra Pradesh, indicating that the potential fertility reduction due to age at marriage increase in these states was not more than 18 percent. In the country as a whole, the Cm

index was obviously found to be large (.78), indicating that the decline in potential fertility is by about 22 percent. It may be noted that the classification of the states on the Cm index is again analogous to the classification of states based on marriage pattern in the earlier section (based on a_0 and k values of Coale's nuptiality model.) Since the Cm index specifies the impact of changes in marital structure, it reassuringly confirms our belief that the proportion of reduction in fertility due to marriage is highest in Kerala, lowest in the states of Madhya Pradesh, Uttar Pradesh, Bihar, Rajasthan and Andhra Pradesh, and intermediate in the rest of the Indian states.

Thus the cross-province differences in marriage pattern and in its consequences on fertility are large and there is need to understand the crucial determinants that can raise age at marriage for females in the country in order to frame suitable social intervention policies.

Determinants of Age at First Marriage

In India, where the demographic transition is still under way, marriage norms have been uniformly very favourable to high marriage prevalence and early marriages in major states, as evident from the data presented in earlier sections. Nevertheless, there has been some change in the situation and the increase that has taken place in age at marriage is due to socio-economic changes, particularly improvements in education, urbanization and expansion of work opportunities outside agriculture. Increasing educational attainment has helped to transform the entire value system governing marriage and the family, as well as to spread new ideas about marriage and the family. Work participation outside agricultural domain has substantially increased the individual's economic independence from parents, thereby helping young couples to determine their marriage mate. This is evident from the state-wise nuptiality transition pattern where the changes in marriage timing is consistent with basic socio-cultural changes in the state (data not presented). Moreover, there have been many attempts to explain the change in the pattern of age at marriage. Goode's (1963) modernization theory emphasizes the impact of industrialisation on marriage patterns. Modernization operates at both societal and individual levels by affecting marriage timing. According to him, expansion of educational opportunities, changes in work force and occupational activities, and urbanization are the most important 'modern forces'. In the process of modernization individuals with higher social status (more education, modern occupational roles etc.) want more freedom and thus tend to marry later in life. Place of residence is another factor-people reared in urban areas are exposed to more diverse life-styles and to weaker social controls than those who are reared in rural areas or small towns. As a result, those growing up in an urban environment are more likely to marry late than those living in the rural areas.

Empirical studies in Asian countries support Goode's (1963) modernization theory (Minh, 1997; Savitridina, 1997). The effect of these modernization factors may be found in any population, although the degree influence of each factor may not be the same across countries and time or across provinces and country.

In addition to modernization, there are other influential factors affecting the pattern of age at marriage, for example, religion and caste or ethnicity, in certain developing countries. In this context, Dixon (1971) in her sociological framework emphasized the effect of social institutions, such as the family system and marriage norms and customs as well as factor such as warfare, which may affect the age-sex ratio. While marriage squeeze (availability of marriage partner) is likely to have little effect on the age at marriage in most of the Indian states (there being no severe imbalances in the age-sex ratio of the marriageable population during the recent past) the other factors such as the family system, social pressure, marriage norms and customs as well as individual motivations to marry and financial and social conditions are again likely to be influenced by the modernization forces. There are few studies, which have dealt with these factors affecting age at first marriage in India. Most studies have focussed on the impact of early marriage on fertility rather than to better understand how to solve the issue of early marriages in India. In view of this, an examination of marital behaviour and its determinants in varying socio-cultural set up would be useful for policy makers and planners to monitor social intervention programme. Considering the diversity in marriage pattern and socio-economic changes across the country, it was felt necessary to study the effects of various socio-economic and other factors on the pattern of age at marriage in certain selected states showing distinct nuptiality pattern (based on the analysis presented earlier). For example, Kerala being the only state in the first group which is leading the nuptiality transition in the country, and Rajasthan and Uttar Pradesh, being the least progressive group of states are selected, where as Tamil Nadu, Gujarat and West Bengal are selected from the intermediate categories. The other consideration in the selection of these six states is their progression towards fertility transition. For example, Kerala is also leading the fertility transition while Rajasthan and Uttar Pradesh belong to the group of states, which have progressed least towards fertility transition.

The data for this analysis, as mentioned earlier, come from the National Family Health Survey (NFHS) which was undertaken during 1992-93 and covers most of the states in the country. Because of the data limitations, not all-critical explanatory variables can be included in the analysis. However, it is possible to measure the impact of family background, ethnicity, rural/urban residence, childhood residence, education, labour force participation and husband's characteristics on the age at which females marry. Given the nature of data and the need of analysis of various factors simultaneously with necessary control of

other relevant factors, Multiple Classification Analysis (Andrews et al., 1971) was employed to the survey data of the six selected states of India, having varied nuptiality pattern and socio-demographic changes, to identify important explanatory factors in the respective distinct group of states and the common characteristics with the general marriage transition in the country. It may however be noted that for the purpose of this study, the analysis has been restricted to ever-married women aged 25-49 years in the respective state. The females aged 15-24 years were excluded from the analysis to avoid a censoring bias due to the fact that many of them are still unmarried. The results of the multivariate analyses using MCA for the three groups of states are summarised in Table 9, Table 10 and Table 11. They are discussed in the following sections taking each group of states separately.

Kerala and Tamil Nadu

What are the determinants of late marriage in Kerala and Tamil Nadu, the southern part of India, which are being considered as "Model States" in view of their relatively better success in progressing towards fertility transition. The singulate mean age at marriage for females is in the range of 21-22 years and total fertility rate is in the range of 2.0 to 2.5 in these two states. It is interesting to note from the results of MCA presented in Table 9 that religious affiliation and female education are the two most important factors affecting age at marriage for females in Kerala. As can be seen from the values of Eta and Beta in Table 9, these variables have both direct effects and indirect effects through women's participation in labour force outside agriculture. The results also show that in general the effect of male education is less important than the effect of female education on age at first marriage. Husband's education was not found to have a significant effect after the adjustment of the effect of the female education and other explanatory variables. Respondent's current residence and childhood residence (rural/urban), which in general reflect their cultural background and marriage norms and family system and those females who grew up or live in cities tend to marry later than those who grew up in the marriage pattern of rural and urban areas. This phenomenon is a possible consequence of modernization, which has already resulted due to expansion of educational opportunities and changes in work force and occupational activities, particularly for females in the state. However, occupational effects on marriage are largely a function of education. As mentioned earlier, religion is also one of the key factors which mediates the effects of social changes and social status of the brides and grooms on marriage timing. For example, the data show that compared to Hindus and Muslims, the other religious groups, mainly Christians, which form almost one-fifth of Kerala's population, are more likely to marry late. Finally, the Kerala data suggest that, although there is no significant difference among the younger and older cohort in marriage timing, the effect of modernization forces should not be

ignored. Moreover, our earlier analysis shows that there has been a significant decrease in the proportion of women who married early in the state.

Table 9: Effects of Social Variable on Age at Marriage of Married Women, Aged 25-29 in the two selected states of India with relatively high age at marriage and low fertility, 1992-93

Independent variables	Result of MCA							
	Kerala				Tamil Nadu			
	Unadjusted deviation a	Adjusted deviation a	Eta	Beta	Unadjusted deviation a	Adjusted deviation a	Eta	Beta
1	2	3	4	5	6	7	8	9
<i>Present residence</i>	.29	0.09	.04	.01	1.20	.22	.25	.05
Urban	.12	-0.4			-.66	-.12		
Rural								
<i>Childhood residence</i>	.10	-.20	.01	.02	1.28	.16	.23	.03
City/Town	-0.1	.04			-.54	-0.7		
Village								
<i>Religion</i>	.64	.55	.04	.31***	-.19	-.07	.20	.12***
Hindu	-3.14	-2.48			-0.5	-0.68		
Muslim	1.56	1.11			2.74	1.61		
Other (Christian)								
<i>Caste</i>	-.41	-.55	.02	.03	-1.33	-.63	.17	.08***
Scheduled caste	-.37	-.25			--	--		
Scheduled tribe	.03	.03			.29	.14		
Others								
<i>Husband's education</i>	-1.37	-.16	.30	.07	-1.37	-.24	.40	.07*
No education	-1.00	-.20			-.65	-.11		
Primary	1.00	.35			.63	.29		
Middle school	2.13	.23			1.80	.25		
Higher Secondary	3.48	1.07			3.09	.92		
College	2.46	-.38			3.28	.09		
University								
<i>Woman's education</i>	-1.61	-.90	.40	.26***	-1.32	-.78	.51	.31***
No education	-1.17	-.75			.00	-.10		
Primary	1.11	.57			1.57	.96		
Middle school	3.12	2.01			3.45	2.23		
Higher Secondary	4.29	3.08			5.54	3.52		
College	4.62	3.05			5.95	3.41		
University								
<i>Woman's occupation</i>	-.24	-0.8	.25	.09***	.60	.10	.41	.16***
Housewife	4.23	1.44			5.38	2.30		
Professional/manager/clerical	-.51	-.40			-.88	-.70		
	-.62	-.33			-1.48	-.41		

Sale/service worker Agricultural workers/cultivators Skilled workers	-.18	-.05			.08	0.35		
<i>Current age</i>	.08	-.08	.08	.04	.36	.21	.17	.10***
25-29	.41	.20			.57	.28		
30-34	.15	.20			.20	.23		
35-39	-.22	-.11			-.58	-.35		
40-44	-.76	-.33			-1.16	-.73		
45-49								
All women b	3518				2955			
Grand mean	19.6				17.8			
Adjusted R2 (%)	26.2				31.5			

* Significant .05

** Significant at .01

*** Significant at .001

+ Multiple Classification Analysis was carried out for each state with age at marriage as the dependent variable.

a Adjusted/Unadjusted deviation from grand mean of the dependent variable

b The analysis has been restricted to ever married women aged 25-49 years, the female aged 15-24 were excluded to avoid a censoring bias in the analysis of age at marriage.

Like Kerala, the analysis of marriage pattern in Tamil Nadu reveals the importance of female education, work participation and religious affiliation. In addition, the other cultural background such as caste affiliation, childhood residence or current residence have significant effects on the age at first marriage for females. Here again, the effect of male education is less important than the effect of female education on the age at first marriage. The results once again indicate the importance of modern forces such as improvement in the educational attainment, change in occupational activities, particularly for females, and urbanization on marriage pattern. The changes in the pattern of marriage timing over time as a result of modernization is evident in the state (Table 9), showing the increase in age at first marriage from the older cohort to the younger cohort. However, it is important to note for the state of Tamil Nadu that the process of modernization is yet to percolate in the rural areas where early marriage is more common than in urban areas.

Gujarat and West Bengal

Gujarat, which is located in the western part, and West Bengal, which is located in the eastern part of India, represents the group of states which are progressing moderately towards fertility transition. The singulate mean age at marriage for females is in the range of 19-20 years and the total fertility rate is about 2.9 to 3.0 in these two states. The study of these states would also reflect the effect of industrialisation on the nuptiality pattern. The results of multivariate analysis, using the same socio-cultural variables as independent variables and female's age at first marriage as the dependent variable for the ever-married women aged 25-49 years in the state of Gujarat and West Bengal, are summarised in Table 10. In both the states, women's educational attainment is found to be the single most important determinant of female's age at first marriage, even after adjustment of the effects of other explanatory variables. In this regard, female education beyond school seems to have a consequential effect on their age at first marriage (please see unadjusted and adjusted deviation from the grand mean in Table 10), indicating that increased schooling is not an impediment to early marriage if it entails only just finishing primary or middle school. Another aspect along with education that can affect age at marriage for females is her participation in the labour force. However, increased participation of women in the labour force may just be the result of economic necessity and it does not always lead to delaying marriage. Here, women's participation in the modern sector coupled with some education as evident from the results of the two states in Table 10, tend to delay marriage. Table 10 further reveals that women's other background such as religious or caste affiliation as well as residential background also have an effect on age at marriage in both the states, indicating that the traditional marriage norms are still important in these states. Nevertheless the possible consequence of modernization is apparent from the rural-urban differences in marriage pattern which usually starts in urban areas before spreading its influence gradually into rural areas. The impact of modernization factors on the marriage pattern is also evident from the fact that there is a significant increase in age at first marriage among young females compared to the older cohort (with age 35 years and above) in both Gujarat and West Bengal.

Table 10: Effects of Social Variable on Age at marriage of married women, aged 25-49, in the two selected states of India with relatively medium age at marriage and medium fertility, 1992-93

Independent variables	Result of MCA							
	Gujarat				West Bengal			
	Unadjusted deviation a	Adjusted deviation a	Eta	Beta	Unadjusted deviation a	Adjusted deviation a	Eta	Beta

1	2	3	4	5	6	7	8	9
Present residence	1.22	.49	.23	.09	1.90	.18	.27	.03
Urban	-.69	-.28			-.62	-.06		
Rural								
Childhood residence	1.39	.19	.22	.03	2.77	.52	.32	.06
City/Town	-.55	-.08			-.60	-.11		
Village								
Religion	-.17	-.13	.13	.09	.43	.17	.21	.09
Hindu	1.10	1.16			-1.46	-.61		
Muslim	2.70	.74			1.65	1.15		
Other								
Caste	-1.01	-.53	.07	.09***	-1.50	-.44	.11	.05**
Scheduled caste	-.36	.81			-.12	.78		
Scheduled tribe	.13	-.11			.16	.00		
Others								
Husband's education	-1.09	-.18	.31	.04	-1.55	-.30	.47	.07*
No education	-.58	.01			-.74	-.04		
Primary	.52	.15			.69	.11		
Middle school	.74	-.32			3.00	.77		
Higher Secondary	2.27	.17			4.34	.37		
College	3.25	.33			4.47	.39		
University								
Woman's education	-1.02	-.83	.42	.36***	-1.48	-1.10	.57	.43***
No education	-.21	-.26			.08	.06		
Primary	1.84	1.52			3.09	2.25		
Middle school	3.20	2.86			5.57	4.30		
Higher Secondary	5.36	4.49			6.87	5.24		
College	6.35	5.41			7.98	6.17		
University								
Woman's occupation	.62	.12	.24	.07**	.15	-0.1	.25	.09***
Housewife	3.56	.47			5.57	1.90		
Professional/manager clerical	-1.43	-1.34			-1.77	-.92		
Sale/service workers	-.99	.01			-.86	.02		
Agricultural workers/cultivators	-.75	-.34			-.70	.16		
Skilled workers								
Current age	.36	.18	.13	.08***	.65	.56	.16	.13***
25-29	.50	.33			.48	.33		
30-34	-.04	-.09			-.17	-.23		
35-39	-.38	-.12			-.95	-.77		
40-44	-1.05	-.66			-.98	-.63		
45-49								
All women b	2800				2902			
Grand mean	17.2				15.6			
Adjusted R2 (%)	21.7				36.3			

* Significant .05

** Significant .01

*** Significant .001

. Multiple Classification Analysis was carried out for each state with age at marriage as the dependent variable.

a Adjusted/Unadjusted deviation from grand mean of the dependent variable.

b The analysis has been restricted to ever married women aged 25-49 years, the females aged 15-24 were excluded to avoid a censoring bias in the analysis of age at marriage.

Uttar Pradesh and Rajasthan

Finally, Uttar Pradesh which is located in the central part of India and Rajasthan which is located in the northern part of India, are selected from the group of states which are found to have highest incidence of early marriages and have so far progressed least towards fertility transition. For example, the singulate mean age at marriage is slightly less than 19 years (percent of women aged 20-24 years married before 18 years being 64-70 per cent) and total fertility rate is in the range of 3.6 to 4.8 in these two selected states.

To understand the determinants of age at first marriage for females in these less developed states, the results of multivariate analysis are shown in [Table 11](#). It is evident from this table that the results are more or less similar to that found for the states of Gujarat and West Bengal. Nevertheless, the data of these two states do suggest that low level of female education and familial background such as religion; caste and childhood residence or places of stay (rural/urban) are the major determinants of early marriages. Male education seems to have limited effect on the age at first marriage. The level of education and labour force participation outside agriculture and other labour work are yet to attain threshold level to have their effects in these states. The direct effect of women's occupation is found to be insignificant in these two states, indicating that occupational effects on marriage are largely a function of education. These findings thus suggest that characteristics of family background are still important in shaping the pattern of age at first marriage in these states. However, education, particularly female education (at least beyond primary or middle level), can overcome the effects of social institutions, such as the family system and marriage norms and customs in raising the female age at marriage in these

states. The effect of these modern forces are not yet substantial among the younger cohorts as well as among urban women.

Table 11: Effects of Social Variable on age at marriage of married women, aged 25-49 in the two selected states of India with relatively low age at marriage and high fertility, 1992-93

Independent variables	Result of MCA							
	Gujarat				West Bengal			
	Unadjusted deviation a	Adjusted deviation a	Eta	Beta	Unadjusted deviation a	Adjusted deviation a	Eta	Beta
1	2	3	4	5	6	7	8	9
Present residence	2.83	1.03	.40	.15***	1.78	.40	.25	.06**
Urban	-.85	-.31			-.48	-.11		
Rural								
Childhood residence	3.36	.77	.39	.09***	2.16	.07	.24	.01
City/Town	-.68	-.16			-.37	-.01		
Village								
Religion	-.32	-.26	.21	.15**	-.07	-.04	.13	.10***
Hindu	1.34	1.31			-.09	-.14		
Muslim	4.01	1.64			3.21	2.15		
Other								
Caste	-1.86	-.82	.21	.10**	-.98	-.62	.21	.11**
Scheduled caste	.06	1.26			-1.05	-.37		
Scheduled tribe	.35	.13			.59	.29		
Others								
Husband's education	-1.03	-.31	.34	.08***	-.78	-.17	.31	.05
No education	-.75	-.16			-.25	.07		
Primary	.37	.38			.52	.21		
Middle school	1.17	.30			1.82	.30		
Higher Secondary	2.84	.33			3.14	.25		
College	3.76	.24			3.77	.04		
University								
Woman's education	-.87	-.58	.49	.33***	-.58	-.44	.43	.35***
No education	1.05	.76			1.25	.62		
Primary	2.67	1.60			3.46	2.54		
Middle school	4.51	3.00			5.02	4.14		
Higher Secondary	6.28	4.28			6.42	5.63		
College	7.39	5.34			8.55	8.15		
University								
Woman's occupation	.17	-.02	.16	.05	.37	.21	.22	.09
Housewife	4.12	.05			3.55	-.94		
Professional/manager clerical	-.44	-.43			1.29	-.02		
	-.88	.31			-1.12	-.51		
	-.85	-.75			-.26	.20		

Sale/service worker Agricultural workers/cultivator s Skilled workers								
<i>Currant age</i>	.58	.42	.14	.09	.17	.09	.03	.04
25-29	.25	.13			-.17	-.17		
30-34	-.06	-.20			-.05	-.12		
35-39	-.35	-.14			.02	.00		
40-44	-1.03	-.57			.01	.31		
45-49								
All women b	7813				3673			
Grand mean	14.6				14.2			
Adjusted R2 (%)	33.4				22.1			

* Significant .05

** Significant .01

*** Significant .001

. Multiple Classification Analysis was carried out for each state with age at marriage as the dependent variable.

a Adjusted/Unadjusted deviation from grand mean of the dependent variable.

b The analysis has been restricted to ever married women aged 25-49 years, the females aged 15-24 were excluded to avoid a censoring bias in the analysis of age at marriage.

A comparison of the results from these six states which are selected from the various regions of India having varied nuptiality pattern and fertility level, seems to suggest that the pattern of age at first marriage for females in a state share common characteristics with the general marriage transition in the country and in this regard, modernization forces such as growing urbanization, increasing educational attainment and expansion of working opportunities outside agriculture, particularly for females, have significant in fluences on the postponement of marriage in India. Although the direct effects of men's socioeconomic characteristics are not always found to be significant, their role in affecting female age at first marriage should not be ignored.

Conclusions and Policy Implications

In this paper, we have focussed on the analysis of levels and trends in age at first marriage of females, the impact of nuptiality pattern on fertility decline and the

determinants of early marriages in India. Using different indicators for the study of level and trends in nuptiality at the national level, the overall results seem to suggest a shift in the age at first marriage of females in the country and the incidence of marrying at early ages (below 18 years) has reduced over a period of time, although a significant proportion still gets married in their teenages. The state level analysis of the nuptiality trend during the last three decades also reveals that while there is some increase in age at marriage in all the states, teenage marriages and universal marriage among women still persist as cultural characteristics of Indian population. However, early marriage is more prevalent in states of Uttar Pradesh, Madhya Pradesh, Andhra Pradesh, Bihar and Rajasthan than in the other parts of the country. A further study of the nuptiality transition pattern, based on Coale's nuptiality parameters (a_0 , k), among the Indian states reveals the supremacy of Kerala as a forerunner, the states like Uttar Pradesh, Madhya Pradesh, Andhra Pradesh, Bihar and Rajasthan are once again grouped at the lower end, in terms of the progress they have achieved in the nuptiality transition. The other major states of the country which include both developed and less developed states, lie in the intermediate position. The states leading in the nuptiality transition are characterised with a higher start at age marriage of females ($a_0 > 15$ years) and a better spread of marriage ($k \geq .5$) extending to relatively higher age, while the states that progressed least towards nuptiality transition are characterized with a lower age at start and a low spread ($a_0 < 15$, $k < .5$), thus yet wanting in favourable changes to occur in terms of timing and pace of marriage.

The pattern of nuptiality transition in the major states of India is, as expected, consistent with the fertility transition in the respective states, as evident from their level of current fertility indicated by the recent National Family Health Survey. The differential impact of nuptiality changes across the states is also evident from the analysis of proximate determinants that control fertility. The analysis of NFHS data using the Bongaart's Multiplicative Model, indicates that the inhibiting effect of marriage on fertility is much more in Kerala (the proportion of total fecundity accounted for by the marriage component being almost 50 percent) than in the group of states that progressed least in nuptiality transition (a maximum of 18 percent accounted for by the nuptiality component). The effect of nuptiality changes in the other states ranges between 24 percent (West Bengal) and 37 percent (Punjab). As a result, the inhibiting effect of marriage on fertility in the country as a whole, which works out to be about 22 percent, cannot be ignored.

Therefore, there is enough evidence to believe that the patterns of age at first marriage of females in India have been undergoing transformation from a traditional to a modern context. Age at first marriage has increased significantly over the last few decades and it has had effects visible on the level of fertility in

the country although there is enough scope to increase age at marriage for females in the country. The next issue obviously arises about identifying the factors that have the potentiality to further increase age at marriage. As in other Asian countries, the changes in nuptiality pattern in this country is basically related to socio-economic changes in India. Investigating the determinants of female age at first marriage in different groups of states varying in their nuptiality pattern, it is noted that changes in three distinct socio-economic variables such as religion, education, status of women and employment, have had influenced female age at marriage in a state like Kerala, while it is growing urbanization, expansion of educational attainment and work opportunities in the modern sector, particularly for females, that are key factors shaping the new pattern of age at marriage in the states like Tamil Nadu, Gujarat and West Bengal. In other words, those women who are more educated, who live or had lived in the urban areas and who work in modern sectors tend to get married later in life than their counterparts. On the other hand, although the results in the least progressive states, Uttar Pradesh and Rajasthan are more or less similar to states in the middle category, the effect of these modernization factors are not yet substantial among the younger cohorts as well as among urban women. Nevertheless, the overall results of all the selected states seem to suggest a common characteristic with the general marriage transition in the country and it is the socio-economic changes such as education, employment and urbanization that seem to be influencing the postponement of female age at marriage.

To conclude, it must be noted that the role of nuptiality in achieving reduction in fertility is clear from the results, in particular in the states that are leading in the nuptiality transition. Therefore, the population policies aimed at reducing fertility should consider marriage as an element of fertility change. In this regard, it is important to investigate the role of various socio-economic and cultural factors such as education, occupational activities, role of women, economic independence, family structure, marriage norms and customs, ethnicity, economic hardships, unemployment and migration on the nuptiality changes, for suitable social interventions. All these aspects could not be examined in this study. Only quantitative research may not be enough and it needs to be complemented by in-depth research on the reasons for the slow increase in age at marriage, particularly for the states which have progressed least in the nuptiality transition. Nevertheless, this study which covered a number of states in the quantitative analysis of the factors affecting the age at first marriage of the females, shows that one could consider the role of modernization factors such as growing urbanization, increased educational attainment and employment opportunities outside agriculture, particularly for females. While policies cannot immediately change the rural-urban structure nor where people are born, they can target areas that are amenable to change such as increasing educational attainment, providing occupational opportunities outside agriculture, and

formulating programmes that empower young people to make their own decisions concerning marriage. Considering the fact that the fertility reducing effects of marriage are strongly related to the educational level of women, a special focus is needed for improving women's educational attainment, atleast beyond school, the impact of which on marriage is particularly pronounced among Indian Women.

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