

Analyzing the Shift in Age at Marriage of Female at State Level in India

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ABSTRACT

Marriage is a universal phenomenon. It is very important as it indicated the entry into the sexual union which impacts population growth through childbearing. Mean age at marriage in India is continually increasing overtime. There is a clear north-south dichotomy in marriage timing in India. Most of the north Indian states have comparatively lower mean age at marriage than south Indian states. Increase in mean age at marriage in these states is result of decrease in teen-age and early marriages. The change in marriage timing in a state is a function of the factors operating at two different levels i.e. National level and regional level that includes socio economic condition and the state level policies. The analysis makes it clear that northern states, have some strong regional factors that are leading them perform better. States of south India and north east India have specialized in some dragging forces. Age at marriage and SDG goals are linked with a positive feedback mechanism. Therefore, promoting delayed marriages should be an integral part of development agenda.

Key Words : SMAM, Shift share analysis, National effect component, Cohort impact component, Regional differential component

INTRODUCTION

As an institution, marriage legitimizes sexual relationship normally between opposite sex- man and woman. Child born out of wedlock is socially unacceptable and illegitimate in many societies. According to the Encyclopedia of Social Sciences, marriage is an unequivocally sanctioned union within which sexual intercourse is legitimate. Marriage, as a social and legal sanction, binds the families together and the partners are abide by certain rights and obligations to the family. In India, marriage is not merely a social and legal contract between two individuals but also a religious sacrament.

Typically, marriage marks the entry into sexual union. Age at first marriage or “age of entry in sexual union” is recognized by Davis and Blake (1956) as one of the “Intermediate variables” which affect fertility and thus population growth. Due to early marriage, a woman is exposed to longer reproductive span in union and hence more children are likely to be born to such a woman.

Apart from demographic implications, “age at marriage” has social, economic and health effects. In a patriarchal society, the negative impacts of low age at marriage are born by female more than her male counterpart. Due to early marriage, the higher educational attainment and thereby economic opportunities of a woman are compromised. Also, Child marriage is considered to violet basic human rights and it is a major roadblock to women empowerment. More often than not, low age at marriage leads to early childbearing and early onset of motherhood is a major risk factor in maternal and infant mortality. A girl bride is not physically and psychologically mature for childbearing. This has major health consequences for the mother and child. Young unqualified mother lacks life-skills and there is lack of awareness about proper child care among such mother. Child from an uneducated or a little educated mother, who is married at a lower age and thus deprived of education opportunities, is less likely to attend the school. Thus, early marriage of a girl child has

generational impact.

Institution of marriage throughout the globe is getting transformed. Delayed marriage, no-marriage and high divorce rate characterize the marriage institution in Western Societies. The proportion of women unmarried in 30-34 year age group is amazingly increasing in many European countries and United States. In 2009, 48.7% women in France, 47.8% in the United Kingdom, and 26.3% in the United States reported to be unmarried, Srinivasan and James (2015). In their study, conducted using US census data for second half of the last century, Lundberg and Pollak (2015) found that, in the United States, marriage behavior has changed considerably and there is weakening of the marriage as an institution since 1950. More often than not, either cohabitation is followed by marriage or it is used as an alternative to marriage.

Experience of East Asia, in terms of late marriage and singlehood, is as same as US and European countries, Dales (2014) mentions in his article based on the study of post-war Japanese society. For last half a century, the author asserts, Japan is witnessing significantly increasing trend of delayed marriages, divorce and lifelong singlehood and higher proportion of persons are now staying unmarried throughout their life. But in some aspects, East Asia is markedly different than western societies; the never-married women in this region hardly contribute to the population growth as childbearing out of wedlock is considered illegitimate in countries like Japan. Furthermore, while live-in arrangements or cohabitations without formal marriage are commonplace in western countries; the East Asian society is still not accustomed to these. In South Korea, in 2009, only 1.6 % of babies were born outside the marriage but in the same year the percentage of baby born out of the wedlock was around 40 % in United States (Srinivasan and James, 2015).

India, a land of diversity, has a variety of factors that affect nuptial decisions. These factors vary in terms of intensity and effect from society to society, state to state causing variation in age at marriage. Therefore, it becomes imperative to study the trend and pattern of age at marriage in India. The paper aims to analyse the changing age of marriage for female by studying age specific proportion never-married at state level. Furthermore, it also attempts to find the contribution of state level, national level and age-specific factors which cause state level variation by using shift-share analysis. By this the paper paves the way for further research on specific factors responsible for variation into nuptial age

in India.

In India, timing of marriage varies across and within the societies, for example, practice of marrying girls at an early age is more common in western and northern part of India. India has witnessed steady but slow increase in age at marriage. The mean age at marriage for female in India was as low as 12.5 years in 1931. In 1951, it was 15.6 years (Das and Dey, 1998). Mean age at marriage for female rose to 18.3 in 1981, 20.2 in 2001 and 21 years in 2011. There is great variation in age at marriage across the states in India. In 2011, among major states Rajasthan and Bihar had lowest mean age at marriage for female-19.7 each. With 25.5 years each, North-East states, viz., Nagaland and Manipur topped the list of mean age at marriage for female. Rural and urban areas of all the states have recorded increase in mean age at marriage (Das and Dey, 1998). According to Xenos and Gultiano (1992) increase in age at marriage for female is due to shift in the age at first marriage and lessening the incidents of child marriage. Dommaraju (2009) has also held decreasing girl-child marriages responsible for the gradual increase in the mean age at marriage. According to Das and Dey (1998), slow but gradual increase in the same can be attributed to the socio-economic changes, especially to improvement in education; urbanization and increasing employment opportunities.

Moreover, Census data indicates that India has witnessed slow but gradual increase in percentage never-married among women aged 35- 39 years since 1981. Census of India (2011) data also presents that more men and women above twenty-five years age remain unmarried than earlier. In 2011, about 6.4% of all persons older than twenty-five years were unmarried. In 2001, the proportion of never-married persons in above twenty-five years age group was 5.3%. There is great regional and state level variation in marriage timing in India. According to findings by NFHS-3, conducted a decade ago in 2005-06, among women in the cohort of 18-29 year age group, 52 % were found to have married by age eighteen years in Uttar Pradesh. In Kerala and Tamil Nadu percentage of such women was 25 and 17, respectively (Desai and Andrist, 2010).

METHODOLOGY

The study uses secondary data collected by Census of India from past four censuses- 1981, 1991, 2001 and 2011 to show the changing pattern of age at marriage in India. Singulate mean age at marriage (SMAM) is taken

as a measure of age at marriage which is calculated by using Hajnal's method (Hajnal, 1953). SMAM, according to United Nations, is average length of life, expressed in years, lived as never-married among those who marry by age 50. It, actually, measures mean age at first marriage. SMAM considers the proportion never-married population between age 15 to 50 years, breaking it into different age groups, *i.e.*, 15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49 and population of never-married in age 50. Therefore, to assess the change in SMAM which is driven by change in particular age groups, it becomes necessary to examine the pattern of change in age specific proportion never-married in various age groups from 15-50 year. To find out this, in this paper, proportion never-married in 15-49 year age group (proportion never married in age 50 year is omitted because of data limitation and also there are negligible proportion of never-married at age 50 year) is divided into five groups- 15-17, 18-19, 20-24, 25-29 and 30-49.

Shift Share Analysis:

Shift-share analysis, a decomposition technique, is used frequently by regional scientists to study the changes in the economy of a region *vis-à-vis* the nation. The method breaks regional change in variable under consideration, into three components, *viz.*, national growth effect, industrial mix effect and regional share effect. Being a decomposition tool, shift-share analysis is used widely for the assessment of regional performance and regional changes. The method is very popular among the scholars and researchers working in the field of regional development, examining employment change of a region. But this is not the only field where the method is used. Shift-share analysis has also been use widely by geographers and demographers. Plane (1987) used this method to study regional migration trends in USA; racial, gender and other demographic changes have been studied using shift share analysis. Smith (1991) studied change in occupational sex-composition; Franklin and Plane (2004) analyzed fertility change in different regions of Italy using this method. Used for descriptive analysis, it serves two main objectives. First, the results show which regions experience faster change, increase or decrease, in the selected variable than the nation. The results, secondly, also suggest the degree to which such changes might be attributed to national or regional causes (Franklin and Plane, 2004).

Formula for shift-share analysis is following:

$$NE_{as}^{t1} = NM_{as}^{t0} \times \left(\frac{NM_{IN}^{t1}}{NM_{IN}^{t0}} - 1 \right)$$

$$CE_{as}^{t1} = NM_{as}^{t0} \times \left[\left(\frac{NM_{alN}^{t1}}{NM_{alN}^{t0}} - 1 \right) - \left(\frac{NM_{IN}^{t1}}{NM_{IN}^{t0}} - 1 \right) \right]$$

$$RE_{as}^{t1} = NM_{as}^{t0} \times \left[\left(\frac{NM_{as}^{t1}}{NM_{as}^{t0}} - 1 \right) - \left(\frac{NM_{alN}^{t1}}{NM_{alN}^{t0}} - 1 \right) \right]$$

(NE= National Effect, CE= Cohort Effect, RE= Regional Differential Effect, a= specific age- group, s= specific state, IN= India, NM= proportion never-married, t1= current year, t0= base year)

This study applies shift-share method to analyze the state level changes in age at marriage in India between 2001 and 2011. The method decomposes the changes in to three components: a national effect, a cohort effect, and a regional differential effect. Main interest of the analysis is attributing state level change in proportion never-married to national and state-specific causes. The results of the analysis do not underline the reasons for the changes. The analysis only assesses the changes at states attributes to changes at national level and changes attributed distribution of proportion never-married across age groups. For analysis of change in economic employment level at regional and national level, five years period-gap is taken in shift-share analysis, in general, because of fluctuating and high variable nature of employment and performance of economy. Here, a ten years gap is taken because of the availability of data collected from census of India which is a decadal exercise. That is further justified on the basis of the linear and less variability in marriage timing.

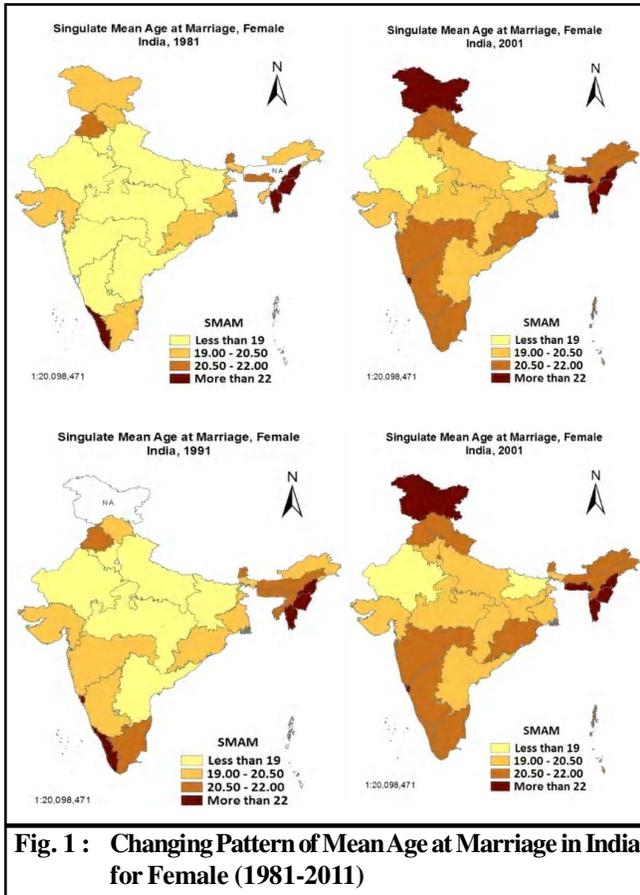
RESULTS AND DISCUSSION

History is evident that socio-economic condition of women in India has not been good. This is also reflected from the fact that child marriages for girls were endorsed in the society until very recently. But the scenario began to change in favour of girls since late twentieth century.

Changing Pattern of Mean Age at Marriage among Female:

All the states, with Kerala as an exception, have witnessed increase in mean age at marriage for female between 1981 and 2011. However, there is great variation

in increase. Some states have registered higher increase whereas some only negligible. Kerala recorded gradual but very slow decline in mean age at marriage for female during this time (Fig. 1).



Tripura, West Bengal and Nagaland have registered minute increase, less than one year, in mean age at marriage for females between 1981 and 2011. The states which have witnessed comparatively higher age at mean age marriage for female in 1981 such as Manipur, Kerala, Mizoram, Punjab, Meghalaya, Tamil Nadu and Sikkim, all more than 20 years, have recorded less increase than national average in mean age at marriage for female between 1981 and 2011. This is because of base effect as the average age of marriage was already higher.

However, the trend of increase in mean age at marriage for female reversed since last census. Nagaland, Manipur, Tripura and Assam witnessed decrease in mean age at marriage for female between 2001 and 2011. All these states already had comparatively higher mean age at marriage. Whereas the states which had lower level of mean age at marriage for female in 1981 such as

Rajasthan, Bihar, Madhya Pradesh, Uttar Pradesh, Andhra Pradesh, all less than 18 years, have witness highest increase in mean age at marriage for female during this period. Uttar Pradesh, Madhya Pradesh, Andhra Pradesh and Himachal Pradesh have recorded more than three years increase in mean age at marriage for female. Jammu and Kashmir recorded highest increase during 1981 to 2011, an increase of more four and a half years in three decades.

There is found great variation in state level pattern of age at marriage for females in India. Mean age at marriage for female in India is 21 years. All the north-eastern states, barring Tripura, along with some states of north and south India, have higher mean age at marriage than the national average. The two north eastern neighboring states of Nagaland and Manipur hold the highest position with 25.5 years mean age at marriage for female. Nagaland and Manipur are followed by Jammu and Kashmir (24.4), Goa (24), Mizoram (23.9), Sikkim (22.8) and Punjab (22.7) among others. These are some of the best performing states. High marriage age of female is a result of better social status of female in the society. Northeastern states have recorded the lowest dowry deaths in India, according to a report by National Crime Records Bureau (2014). This is an indicator of better position of women in the society which is also reflected from higher age at marriage.

Kerala which is one of the states with the highest average marriage age for males in India registers comparatively lower mean age at marriage for female which is 21.9 years. Even Orissa and Uttarakhand have performed better than Kerala. Other states with female mean age at marriage more than India are Maharashtra, Karnataka, Assam, Tamil Nadu, Meghalaya, Arunachal Pradesh and Himachal Pradesh. Uttar Pradesh and Haryana which have recorded 21.1 years mean age at marriage for female which is higher than the national average. No north-eastern and Southern states have less mean age at marriage for female than national average, except Tripura and Andhra Pradesh where mean age at marriage for female is slightly less than that of India. Higher age at marriages in north-eastern states and Kerala can be attributed to religious factor inter alia. These states have comparatively higher share of Christians and according to Das and Dey (1998), Christians are more likely to marry late.

In 2011, with 19.7 years, Bihar and Rajasthan register the lowest mean age at marriage for female in India.

Traditional marriage norms are still prevalent in these states. Modern forces such as education, change in occupational structure and urbanization are too weak to modify the nuptial characteristic in the society, therefore, age at marriage remains low (Desai, 2010). The other low performing states are West Bengal, Madhya Pradesh, Jharkhand, Andhra Pradesh, Tripura and Gujarat with less than 21 years average marriage age for females. Among these states, in Gujarat and West Bengal, according to Das and Dey (1998), women's educational attainment is one of the most important determinants of marriage timing. Other factors which have influence on the age at marriage in these two states are religion, caste and place of residence.

Impact of Change in Age-specific Proportion Never-Married on SMAM:

Singulate mean age at marriage is an instrument of

measuring average marriage timing in a population of a particular region at a time. It takes into account age specific proportion never-married in population between 15 to 50 years. Therefore, change in SMAM is driven by the changes in age-specific proportion never-married. Hence, it becomes imperative to find out the age-group(s) which have major role in driving the change in mean age at marriage, across the nation, in all the states. India has witnessed change in singulate mean age at marriage for female from 20.2 years in 2001 to 21 years in 2011. The shift is driven by increase in proportion never married in 20-24 year and 18-19 year age groups which witnessed the increase of seven and five percentage points, respectively, between 2001 and 2011 (Table 1).

Decline in SMAM for female was negligible in Nagaland, Manipur and Kerala, whereas in Goa, Assam and Tripura marriage timing declined, on an average, by half year. The decline in SMAM in Goa, Tripura, Assam,

Table 1 : State Level Change in Age-Specific Proportion Never-Married for Female in India, 2001-2011

States (? SMAM, 2001-2011)	Change in Proportion Never-married for Female between 2001 and 2011 (in % points)				
	15-17	18-19	20-24	25-29	30-49
India (0.8)	2.98	7.75	7.43	3.13	0.56
Jammu & Kashmir (1.4)	2.59	3.36	8.81	10.02	1.95
Himachal Pradesh (0.9)	-1.33	2.87	10.44	5.54	0.71
Punjab (1.1)	-0.36	2.34	10.73	7.96	0.92
Uttarakhand (0.9)	0.37	7.30	9.11	4.57	0.69
Haryana (1.4)	4.38	15.38	14.68	4.34	0.41
Rajasthan (1.2)	10.89	15.66	8.70	2.12	0.15
Uttar Pradesh (0.9)	6.65	17.43	14.01	3.61	0.49
Bihar (1.1)	11.67	13.88	6.62	1.73	0.21
Sikkim (0.9)	-1.05	1.39	5.94	6.24	1.89
Arunachal Pradesh (1.4)	-0.07	6.29	12.85	8.12	1.87
Nagaland (-0.1)	-0.62	-2.19	-4.02	1.29	2.43
Manipur (-0.1)	-1.27	-2.00	-1.64	0.91	1.89
Mizoram (0.61)	-1.89	-1.12	1.15	4.47	3.04
Tripura (-0.4)	-2.85	-5.79	-2.52	0.53	0.63
Meghalaya (0.3)	-1.67	-4.00	0.05	3.70	1.57
Assam (-0.4)	-0.02	-4.71	-3.66	0.31	1.01
West Bengal (0.2)	1.27	1.52	2.65	1.67	0.32
Jharkhand (1.2)	7.75	7.35	5.43	2.94	0.68
Odisha (0.3)	-0.18	-1.21	1.75	4.09	1.40
Chhattisgarh (1.2)	3.48	15.24	11.15	3.81	0.73
Madhya Pradesh (1.4)	9.22	17.75	10.81	3.40	0.49
Gujarat (0.5)	-3.67	0.42	7.86	3.84	0.68
Maharashtra (0.5)	-4.65	1.64	6.95	4.15	0.99
Andhra Pradesh (1.4)	6.04	17.07	11.95	3.64	0.63
Karnataka (0.3)	-1.68	1.79	3.70	2.65	0.55
Goa (-0.5)	-5.21	-4.74	-6.83	0.50	1.24
Kerala (-0.1)	-0.83	1.05	-0.02	-1.05	-0.55
Tamil Nadu (0.4)	-0.88	2.14	4.79	2.95	0.34

Source: Computed from Census of India, 2001, 2011

Nagaland and Manipur can be attributed to significant increase in marriages between 15 and 24 years age. It is also evident from data that, in these states, those who don't get married during these years are likely to postpone their marriage further. In Kerala, women in all age groups are going for marriage at an earlier age than they used to get married. This is indicated by declining proportion never-married in all age groups between 2001 and 2011.

Among the states which witnessed positive change in singulate mean age at marriage for female, Uttar Pradesh, Haryana, Arunachal Pradesh, Andhra Pradesh, Madhya Pradesh and Jammu & Kashmir stand as the best performers witnessing an increase of around one-and-a-half years in SMAM. In all these states, except Jammu and Kashmir and Arunachal Pradesh, the increase in mean age at marriage is driven by decreasing incidents of marriage at lower ages between 15 and 24 years and not by increasing cases of delayed marriages. Also, these are the states witnessing low marriage age among female. Increase in SMAM in Jammu and Kashmir and Arunachal Pradesh, which already had higher marriage age, is caused mostly due to increase in proportion never married in, respectively, 25-29 year and 20-24 year age groups, *i.e.*, due to delayed marriages.

The other states where mean age at marriage for female rose by more than one year between 2001 and 2011 are Rajasthan, Bihar, Chhattisgarh, Jharkhand and Punjab. Rajasthan and Bihar are infamous of high incidents of child marriage and the lowest mean age at marriage in the country. Increase in SMAM for girls in these two states is solely attributed to declining incidents of teenage girls' marriages in 15-19 year age-group. This cause is equally applicable to Jharkhand as well. Increase in proportion of never married girls in 18-24 year age group led to rise in SMAM in Chhattisgarh and Punjab. Age at marriage for female in Uttarakhand, Himachal Pradesh and Sikkim grew but slightly less than one year in one decade. These states already had higher singulate mean age at marriage. Increase in Sikkim and Himachal Pradesh were mostly due to rise in percentage of never-married women in 20 to 29 years and in Uttarakhand, increase in marriage timing for female was result of postponing marriages in 18-24 years age-group. Singulate mean age at marriage for girls in Gujarat and Maharashtra grew only by half years during intercensal period between 2001 and 2011. These states witness high increase in percentage of women never-married in 20-24 year and 25-29 year age groups but this increase was compensated

by declining proportion of girls never-married in 15-17 year age group resulting into very little rise in mean age at marriage.

In some states, *viz.*, West Bengal, Meghalaya, Orissa, Karnataka and Tamil Nadu SMAM rose by even less than half year. All these states, except West Bengal, have higher mean age at marriage and witnessed increasing incidents of Child marriages, *i.e.*, declining percentage of girls never-married in 15-17 year age group. This had neutralizing effect on SMAM. In Meghalaya teen marriages increased during intercensal period and so did the delayed marriages- less women in 25-29 year age group going for marriage in 2011 than 2001. West Bengal experienced very little increase in age-specific proportion never marriage in all age groups. This led the state to almost zero increase in mean age at marriage for female.

State level Analysis of Changes in Age-specific Proportion Never-Married:

The study of age specific proportion never married in India indicates the paradox regarding marriage timing in India. Practice of child marriage and teenage marriage coexists with the delayed marriages. In India, there were 87 per cent female in 15-17 years age group who were never married or 13 per cent female who were ever married in 2001. This shows prevalence of child marriages, that is, before minimum legal age of marriage. There is no significant change even a decade later. In 2011, the proportion never -married in the same age group rose to 90 %, in other words, still 10 % girls in this age group were married in India. In 18-19 year age-group, proportion of never-married was 58 per cent during 2001 census and by next census it increased to 66 per cent. Significant increase in proportion never-married in 18-19 years age group indicates that the tendency to marry the daughters as soon as they escape the minimum legal age of marriage is getting slow but there is little change in practice of marrying girl-children. Furthermore, significant number of females are still married in their teen ages. In India, around 35 per cent of females are married by the time they are 20 years old. This has a lot of demographic, socio-economic and health implications. Moreover, tendency to delayed marriage is also increasing in the country though it is still insignificant. In 25-29 year age group there were only 5.6 per cent female never married in 2001 which increased to 8.8 per cent in 2011 (Table 2).

Table 2 : Age-Specific Proportion Never-Married Female

States	2001					2011				
	15-17	18-19	20-24	25-29	30-49	15-17	18-19	20-24	25-29	30-49
India	87.06	57.91	22.97	5.65	1.48	90.04	65.65	30.40	8.78	2.04
Jammu & Kashmir	92.16	82.45	51.25	17.14	2.36	94.75	85.81	60.05	27.15	4.31
Himachal Pradesh	96.73	81.33	36.23	6.31	1.21	95.39	84.20	46.67	11.85	1.92
Punjab	94.26	81.03	37.67	6.01	0.72	93.90	83.37	48.40	13.97	1.64
Uttarakhand	94.80	73.84	30.78	5.41	0.91	95.17	81.15	39.89	9.98	1.60
Haryana	87.47	55.59	17.00	1.98	0.45	91.84	70.97	31.68	6.32	0.86
Rajasthan	72.99	36.69	10.06	1.40	0.40	83.87	52.36	18.76	3.52	0.55
Uttar Pradesh	84.76	53.49	16.09	2.95	0.70	91.41	70.92	30.10	6.56	1.18
Bihar	76.74	37.54	9.53	1.52	0.51	88.40	51.42	16.15	3.26	0.72
Sikkim	91.19	71.31	39.52	16.92	5.95	90.14	72.69	45.45	23.16	7.84
Arunachal Pradesh	91.62	68.61	30.40	9.02	2.39	91.56	74.90	43.25	17.14	4.26
Nagaland	93.89	88.52	67.18	35.32	8.63	93.27	86.33	63.16	36.61	11.06
Manipur	94.65	86.29	62.91	35.06	9.68	93.38	84.29	61.27	35.97	11.57
Mizoram	95.38	79.81	49.21	22.96	7.32	93.49	78.69	50.36	27.44	10.36
Tripura	90.59	62.05	31.83	10.97	2.56	87.73	56.26	29.30	11.50	3.20
Meghalaya	91.27	73.67	40.23	15.17	4.48	89.60	69.67	40.29	18.86	6.06
Assam	89.26	65.28	36.19	13.91	3.88	89.24	60.57	32.53	14.22	4.89
West Bengal	85.40	49.82	20.93	7.04	2.68	86.67	51.34	23.58	8.71	3.00
Jharkhand	81.02	46.75	18.60	5.32	1.80	88.77	54.10	24.03	8.26	2.48
Odisha	93.32	74.53	37.31	8.87	1.89	93.14	73.32	39.06	12.96	3.29
Chhattisgarh	90.91	56.73	18.35	4.50	1.02	94.40	71.96	29.50	8.32	1.75
Madhya Pradesh	80.97	43.52	13.61	2.64	0.63	90.19	61.28	24.42	6.04	1.12
Gujarat	91.95	66.91	23.01	4.21	1.17	88.28	67.32	30.87	8.04	1.84
Maharashtra	93.94	65.48	24.31	5.64	1.45	89.29	67.12	31.26	9.79	2.44
Andhra Pradesh	84.23	46.90	16.15	3.35	0.93	90.28	63.97	28.10	6.99	1.56
Karnataka	90.88	65.13	29.46	7.57	1.93	89.20	66.92	33.16	10.22	2.49
Goa	95.37	88.00	64.50	26.88	5.43	90.16	83.26	57.68	27.38	6.66
Kerala	94.46	76.60	41.61	12.97	4.19	93.63	77.65	41.58	11.92	3.64
Tamil Nadu	92.33	73.64	34.83	8.36	1.87	91.45	75.77	39.62	11.32	2.21

Source: Computed from Census of India-2001 and 2011

Child marriage and teenage marriage are prevalent in almost every state of India however the rate of incidence has declined in 2011. As 18 years is the minimum legal age for marriage of girls in India; marrying a daughter before she reaches eighteen is an offence under the law. Therefore, to escape the punishment, parents marry their daughter as soon as she is 18 years old. As the data reveals, this practice is more common in north Indian states. There were only 52 per cent girls in Rajasthan and 51 per cent girls in Bihar who remained never-married in 18-19 year age group in 2001. This tactic was more prevalent ten years ago. In 2001, the percentage of women never married in 18-19 years age group was to 37 and 38 in Rajasthan and Bihar, respectively.

Increase in age-specific proportion never-married in 15-17 year and 18-19 year age groups in Rajasthan and Bihar can be attributed, up to an extent, to sharp increase in proportion of women in 15-19 year age group having at least six years schooling during last one and a half decades. Rise in proportion of adolescent girls (here, 15-19 year age-group) in urban area is also cited as a reason for overall increase in proportion never-married in the respective age-group, according to a report by Moore *et al.* (2009).

Jharkhand is another state with less than 60 per cent girls never-married in this age group in 2011. The states which experienced high increase in proportion never married in 18-19 year age group between 2001 and 2011 are Haryana, from 56 per cent to 71 per cent; Uttar

Pradesh, 53 to 71; Madhya Pradesh, 44 to 61; Chhattisgarh, 57 to 71 and Andhra Pradesh, 47 to 64 per cent. All of these states recorded more than 15 percentage point increase. The least progress was made by West Bengal in this case and it emerged as the state with the lowest percentage of never-married in 18-19 year age group in 2011. West Bengal had 50 per cent girls never-married in this age group in 2001 and recorded the increase of only one percentage in the next one decade. Also, there are states which witnessed decrease in the proportion never-married girls in this age group between 2001 and 2011. These states are Goa, Orissa and all the states of north-east India except Arunachal Pradesh and Sikkim.

In 2001, Goa, Kerala, Jammu and Kashmir and all the states of north-east, except Arunachal Pradesh, recorded percentage of never-married women in double digits in 25-29 year age-group. In 2011, Himachal Pradesh, Punjab, Orissa, Karnataka, Tamil Nadu and Arunachal Pradesh were also included in this club. Haryana, Bihar, Uttar Pradesh, Rajasthan, Madhya Pradesh, Andhra Pradesh, Punjab witnessed more than two times increase. However, none of these states, except Punjab, could attain a double-digit figure in 2011. Age-specific proportion never-married in 30-49 year was less than 10 in all the states in 2001. It remained below 10 in all the states, barring Nagaland, Mizoram and Manipur, a decade later. In Haryana, Rajasthan and Bihar it was even below 1 per cent in 2001 and 2011. This data points that the tendency to marry late is also found and further increasing in some of the states of India as significant proportion of women remain unmarried in age group above 25 years.

The analysis of age specific proportion never-married reveals some pattern in change in marriage timing. Not all the states experienced increase in age specific proportion never-married in all the age groups. The states which recorded decline in a particular age group had higher proportion of never-married women as compared to the other states, in respective age groups. For example, Himachal Pradesh, Sikkim, Arunachal Pradesh, Punjab, Karnataka, Tamil Nadu, Maharashtra, Gujarat recorded decline in 15-17 year age group; all had more than 90 per cent never-married girls in this age group. Though the proportion never-married remained very high, girls in lower age groups, 15-17 year and 18-19 year, in all the states of north-east India are marrying earlier in 2011 than 2001, indicated by declining trend of proportion never-married in these age groups; women in higher ages, 25-29 year

and 30-49 year, are further postponing their marriage despite of high proportion of never-married women in these age groups as compared to the other states. The states where higher number of female got married at lower ages, viz., Bihar, Rajasthan, Haryana, Uttar Pradesh, Andhra Pradesh etc., are now performing better than other states in terms of reducing the incidence of early marriages, though the proportion of never-married girls is still very low in these states in all age groups.

Contribution of National and State-specific Factors: Shift-Share Analysis:

National Effect Component:

NE (National Effect) component Measures the extent to which the change in the proportion never-married at national level is responsible for the state level change in proportion never-married. If the nation is recording rise in age at marriage, the positive influence of this trend on a state is reasonably expected. National Effect measures the changes in the proportion never-married that a state would experience if changes in proportion never-married in all the age group of the state are equal to that of the nation as a whole. The sign of values (negative or positive) depends upon the change in direction of change at the national level.

As the pattern of mean age at marriage in the states of the country suggests, there is great variety in marriage timing across the states. Trends, however, indicate that most of the states have homogeneity in terms of rise in mean age at marriage, though, at different rates. In some of the states mean age at marriage for female has decreased too. There are local factors which determine the marriage timing in a particular state. Also, there are factors which operate nation-wide and affect age at marriage across the nation. National effect, in shift-share analysis, measures the influence of these very factors on the state-level change. National-effect component of proportion never married for all the states is positive because India witnessed positive change in proportion never marriage in 15-49 year age group, as a whole, and also in all individual age groups, separately. This suggests that had age-specific proportion never-married in all the states grown as same as the national average; proportion never-married in the all age groups, and also as total, in every state would have grown positively. But this did not happen. Actually, the states recorded positive growth in some age groups while negative in others, indicating, thereby, that states did not behave as same as the nation

in toto.

The states, namely, Haryana, Rajasthan, Uttar Pradesh, Bihar, Arunachal Pradesh, Jharkhand, Chhattisgarh, Madhya Pradesh and Andhra Pradesh are the states where overall proportion never-married, in 15-49 year age-group, have grown higher than their corresponding NE values in 15-49 year age groups. Some states are performing better in some age groups and worse in some other. Proportion never-married in 30-49 age group in all the states, except West Bengal, have been more than NE value in that age group. Whereas only Rajasthan and Bihar have performed better in terms of 15-17 year age group and only Uttar Pradesh, Haryana, Jharkhand, Chhattisgarh, Madhya Pradesh and Andhra Pradesh, including Rajasthan and Bihar, have experienced higher growth in 18-19 year age group than their NE values meaning that these states are performing better in 15-17 year and 18-19 year age groups than they would have been had they followed the same growth pattern as India on an average. Rest of the states, viz., Jammu and Kashmir, Himachal Pradesh, Punjab, Uttarakhand, Nagaland, Manipur, Mizoram, Tripura, Meghalaya, Assam, West Bengal, Gujarat, Maharashtra, Karnataka, Goa, Kerala and Tamil Nadu have grown not as much as expected in 18-19 year age group. This means that the states are not performing same as India in this age group. In 20-24, Tamil Nadu and Karnataka grew almost as same as expected. Goa, Kerala and all the states of north-east India, except Sikkim and Arunachal Pradesh, performed worse than expected which is indicated by their NE values being more than change in proportion never-married. In 25-29 year age-group, states other than Nagaland, Manipur, Tripura, Assam, Goa and Kerala witnessed higher growth than expected.

Cohort Effect Component:

This component accounts for differences in age composition across the states that will affect the proportion never-married that takes place. State that specializes in the age group that is growing faster than the national average will have positive value simply due to its age-specific structure of proportion never-married. If a state's highest value of proportion never-married lies in the age group that is growing slower than the national average then the cohort effect will be negative. This means that cohort effect also measures the impact of national change on individual states (Franklin and Plane, 2004).

Some age groups experience decline in proportion of never-married and some may witness increase. It indicates how a growth or decline in a particular age group at national level gets translated into increase or decrease in proportion never-married of that age group in a state. With the increasing trend of mean age at marriage at national level, the lower age groups, 15-17 year and 18-19 year, are likely to experience higher proportion of never-married female due to declining early marriages. Incidents of delayed marriages can also increase. Obviously, there would be higher proportion never marriage at lower ages and, equally obviously, lower percentage of never married in higher age groups. Therefore, due to base effect, even little increase in proportion never-married at higher ages would show a high growth in terms of percentage and even higher increase in lower age groups would result into a small percentage-growth (Table 3).

Age-specific proportion of never-married women in India, and in all the states, declines gradually from 15-17 year age groups to 18-19, 20-24, 25-29 and 30-49 year but the highest percentage change was observed in 25-29 year age group and lowest in 15-17 year age group, at national level. Had all the states followed same structure of age-specific proportion never-married as India, all of them would have experienced same pattern of cohort effect. Some of them did and some others did not. Only Nagaland, Mizoram and Manipur have the highest value of CE in 25-29 year age groups and in other states value of CE is highest in 20-24 year age-group. CE values for 15-49 year age group is always zero for all the states due to mathematical reasons related to the formula of cohort effect.

Regional Differential Effect Component:

It assesses the competitiveness of region. It is the remaining change which is leftover after accounting for national effect and age group effect. The value may be positive or negative. Positive value indicates that the area has advantage and the local factors accountable for this can be identified by studying the literature or information available on the area. Moreover, the close-to-zero regional differential value indicates that the rate of change in variable under consideration in a state tends to have same as that of the nation. High negative of positive value indicates the deviation in performance of states due to state specific characteristics (Franklin and Plane, 2004). Even when the country is recording overall growth in the

Table 3: National Effect, Cohort Effect and Regional Effect Components of Change in Proportion Never-Married (Shift-Share Analysis), 2001-2011

States	15-17			18-19			20-24			25-29			30-49			15-49	
	NE	CE	RE	NE	CE	RE	NE	CE	RE	NE	CE	RE	NE	CE	RE	NE	RE
Jammu & Kashmir	13.00	-9.84	-0.56	11.63	-0.60	-7.66	7.23	9.34	-7.76	2.42	7.08	0.52	0.33	0.56	1.06	4.59	-2.28
Himachal Pradesh	13.65	-10.33	-4.65	11.47	-0.60	-8.01	5.11	6.60	-1.27	0.89	2.61	2.04	0.17	0.29	0.25	3.57	-3.40
Punjab	13.30	-10.07	-3.59	11.43	-0.59	-8.49	5.31	6.86	-1.45	0.85	2.48	4.63	0.10	0.17	0.65	3.51	-1.71
Uttarakhand	13.37	-10.13	-2.87	10.42	-0.54	-2.58	4.34	5.61	-0.84	0.76	2.23	1.57	0.13	0.22	0.34	3.56	-1.02
Haryana	12.34	-9.34	1.38	7.84	-0.41	7.94	2.40	3.10	9.18	0.28	0.82	3.24	0.06	0.11	0.24	2.59	1.56
Rajasthan	10.30	-7.80	8.39	5.18	-0.27	10.76	1.42	1.83	5.45	0.20	0.58	1.35	0.06	0.09	0.00	1.94	2.98
Uttar Pradesh	11.96	-9.05	3.74	7.55	-0.39	10.27	2.27	2.93	8.81	0.42	1.22	1.98	0.10	0.16	0.22	2.50	5.30
Bihar	10.83	-8.20	9.04	5.30	-0.27	8.86	1.35	1.74	3.53	0.21	0.63	0.89	0.07	0.12	0.01	1.78	2.66
Sikkim	12.87	-9.74	-4.18	10.06	-0.52	-8.15	5.58	7.20	-6.84	2.39	6.99	-3.14	0.84	1.41	-0.36	4.52	-4.14
Arunachal Pradesh	12.93	-9.79	-3.21	9.68	-0.50	-2.89	4.29	5.54	3.02	1.27	3.73	3.12	0.34	0.57	0.97	3.52	2.27
Nagaland	13.25	-10.03	-3.83	12.49	-0.65	-14.03	9.48	12.24	-25.73	4.98	14.59	-18.29	1.22	2.04	-0.83	6.35	-9.37
Manipur	13.35	-10.11	-4.51	12.17	-0.63	-13.54	8.88	11.46	-21.98	4.95	14.48	-18.51	1.37	2.29	-1.77	5.74	-7.66
Mizoram	13.46	-10.19	-5.15	11.6	-0.58	-11.80	6.94	8.96	-14.76	3.24	9.49	-8.25	1.03	1.73	0.27	5.06	-5.80
Tripura	12.78	-9.68	-5.96	8.75	-0.45	-14.09	4.49	5.80	-12.81	1.55	4.53	-5.55	0.36	0.61	-0.33	3.43	-6.07
Meghalaya	12.88	-9.75	-4.80	10.39	-0.54	-13.86	5.68	7.33	-12.95	2.14	6.27	-4.71	0.63	1.06	-0.12	4.30	-3.49
Assam	12.59	-9.54	-3.08	9.21	-0.48	-13.44	5.11	6.59	-15.36	1.96	5.75	-7.41	0.55	0.92	-0.46	3.62	-4.89
West Bengal	12.05	-9.12	-1.65	7.03	-0.36	-5.14	2.95	3.81	-4.11	0.99	2.91	-2.23	0.38	0.63	-0.69	2.61	-1.63
Jharkhand	11.43	-8.66	4.97	6.60	-0.34	1.10	2.62	3.39	-0.58	0.75	2.20	-0.01	0.25	0.43	0.00	2.42	1.19
Odisha	13.17	-9.97	-3.38	10.51	-0.55	-11.18	5.26	6.80	-10.31	1.25	3.67	-0.83	0.27	0.45	0.68	3.50	-3.07
Chhattisgarh	12.83	-9.71	0.37	8.00	-0.42	7.65	2.59	3.34	5.21	0.64	1.86	1.32	0.14	0.24	0.34	2.61	2.54
Madhya Pradesh	11.42	-8.65	6.44	6.14	-0.32	11.93	1.92	2.48	6.41	0.37	1.09	1.93	0.09	0.15	0.25	2.15	3.48
Gujarat	12.97	-9.82	-6.82	9.44	-0.49	-8.53	3.25	4.19	0.42	0.59	1.74	1.50	0.16	0.28	0.23	2.90	-2.24
Maharashtra	13.25	-10.04	-7.87	9.24	-0.48	-7.12	3.43	4.43	-0.91	0.80	2.33	1.03	0.20	0.34	0.44	2.89	-1.78
Andhra Pradesh	11.88	-9.00	3.16	6.62	-0.34	10.79	2.28	2.94	6.73	0.47	1.38	1.79	0.13	0.22	0.27	2.26	1.69
Karnataka	12.82	-9.71	-4.79	9.19	-0.48	-6.92	4.16	5.37	-5.83	1.07	3.13	-1.54	0.27	0.46	-0.18	3.08	-3.02
Goa	13.46	-10.19	-8.48	12.42	-0.64	-16.51	9.10	11.75	-27.68	3.79	11.10	-14.39	0.77	1.28	-0.81	4.72	-9.85
Kerala	13.33	-10.09	-4.06	10.81	-0.56	-9.20	5.87	7.58	-13.47	1.83	5.36	-8.24	0.59	0.99	-2.13	3.60	-7.15
Tamil Nadu	13.03	-9.86	-4.04	10.39	-0.54	-7.71	4.91	6.34	-6.47	1.18	3.46	-1.68	0.26	0.44	-0.36	3.24	-4.32

Source: Computed from Census of India 2001, 2011

variable, for example, age specific proportion never-married, some states and some age groups may not experience increase in proportion never-married commensurate with the national trend. This is because of the region-specific or local factors specific to that region.

Individual state level factors can positively or negatively influence marriage timing. Negative value of regional shift does not show the decline in proportion of marriages, rather it indicates percentage points by which proportion marriage would have increased had the state not had strong local factors pulling age at marriage down. The regional differential effect only indicates the existence of state specific factor. It does not give information about the specific factors responsible for the

change. For finding out factors contributing to change in marriage timing and explain the state level variations, age at marriage can be regressed against a wide range of factors.

If some state is facing decline proportion never-married in 15-49 year age group, state must have some local disadvantages that are pushing the more people to marry earlier. Positive growth in percentage of overall never-married in 15-49 year age group suggests that there are some regional level factors which are responsible for delaying the marriage timing. These factors may be state government policies discouraging child marriages and promoting late marriages or improvement in socio-economic factors leading to decline in early marriages. And the states where the regional component is near

zero are highly influenced by national level factors and not the state-specific factors.

Uttar Pradesh, Madhya Pradesh, Rajasthan, Bihar, Chhattisgarh and Arunachal Pradesh have high positive values of regional differential effect whereas Goa, Kerala and Tamil Nadu from south India and Nagaland, Manipur, Tripura, Mizoram, Assam, Meghalaya and Sikkim from northeast India have high negative values. Both groups of states, as they have extreme values, are highly influenced by local factors. Had the states such as Nagaland, Manipur and Tripura not had strong local factors, the states would have witnessed an increase of, respectively, nine, eight and six percentage points in proportion never-married in 15-49 year age groups. On the other hand, Uttar Pradesh experiences five; Madhya Pradesh, three and Bihar two and a half percentage points more increase in proportion never-married female in 15-49 year age group than was expected. These states-states with overall negative and those with overall positive RE values in 15-49 year age-group- have negative and positive values, respectively, in all the all-groups, viz., 15-17, 18-19, 20-24, 25-29 and 30-49 years. State with overall negative regional differential effect in 15-49 year age group can also have positive value in some age groups and vice versa. In India, Jammu and Kashmir, Himachal Pradesh, Punjab, Uttarakhand, Orissa, Gujarat and Maharashtra are the states which had overall negative RE value but some age groups in these states recorded positive values. On the other hand, Arunachal Pradesh and Jharkhand had overall positive value but some age groups also witnessed negative regional differential effect. This is a result of complex mix of local factors which are dragging the proportion never marriage down in some age groups and facilitating postponement of marriages in other age groups. This may also be because of weak local factors.

The state level distribution of mean age at marriage in India exhibits a distinguishable and interesting pattern. There is a clear north-south dichotomy in marriage timing in India. Most of the north Indian states, namely, Uttar Pradesh, Bihar, Madhya Pradesh, Rajasthan and others have comparatively lower mean age at marriage than south Indian states such as Kerala, Tamil Nadu, Goa, Karnataka etc. All the north eastern states, except Tripura, have higher mean age at marriage for female than national average. Furthermore there is found high incidence of child and teenage marriage in states of India.

Incident of child marriage and teenage marriage

have demographic, socio-economic and health implications. "Age of entry in sexual union" or age at first marriage is recognized by Davis and Blake (1956) as one of the "Intermediate variables" which affect fertility and thereby affecting population growth. Due to early marriage, a woman is exposed to longer reproductive span in union and hence more children are likely to be born to such a woman. However, the states which register very low age at first marriage for female such as Rajasthan, Bihar etc. do not exhibit as high growth of population as expected because of practice of *Gauna* which is followed within the marriage institution. This practice differentiates between age at marriage and age at consummation of the marriage. Daughters in North- central India are married at an early age but the marriage is not consummated till they are mature. If the marriage takes place at a higher age, *Gauna* is performed along with the marriage and it is delayed if the girl is married at an early age. The married daughters are allowed to stay with their husbands only after *Gauna* takes place, therefore, consummation of marriage and childbirth takes place only after *Gauna* is performed.

Childbearing in early age has great repercussions on the physical and reproductive health of mother and health of the neonates. Vulnerability to the maternal mortality and infant mortality increases for the women attaining motherhood at early age and the infant born to the mother, respectively. High incidents of maternal and infant mortality in Bihar, Rajasthan, Uttar Pradesh, Madhya Pradesh can be attributed to the high prevalence of teenage marriages in these states.

Mean age at marriage in India increased from 20.2 to 21 years between 2001 and 2011. This shift is result of increase in proportion never-married in 15-49 year age-group. All age groups, 15-17, 18-19, 20-24, 25-29 and 30-49 years witnessed increase in proportion never-married in India. Increase in SMAM in states of north India is due to the postponement of marriage of those in 15-19 or 20-24 age groups and there is no significant change in proportion never-married female in 25-plus year age groups. This implies that increase in mean age at marriage in these states is result of decrease in teen-age and early marriages (below 24 years).

This research finds unique nature of age-specific changes in marriage timing for female between 2001 and 2011 in three different regions of India, namely, North, South and North-east. In North India, however, proportion of never-married female in 15-19 year and 20-24 year

age groups is still lower than other parts of India; it has increased significantly during 2001-2011. Increase in proportion never-married in these age groups has resulted into significant increase in SMAM. There was no considerable increase in proportion of never-married women in 25-29 year or 30-49 year age groups. In South India, the states, except Andhra Pradesh, did not witness significant increase in mean age at marriage for female between 2001 and 2011. It even declined in Kerala and Goa. This is due to decline in proportion of never-married female in 15-17 year age group and no significant increase in proportion of never-married women in other age groups. In northeast India, there is recorded high increase in proportion of never-married female in 25-29 year and 30-49 year age groups as compared to other parts between 2001 and 2011 and decline in proportion of never-married female in 15-17 year and 18-19 year age groups. This has resulted into very little increase or even decrease in SMAM for female in some states during this time. Only Arunachal Pradesh has registered high (1.4 years) increase in mean age at marriage between 2001 and 2011. The shift-share analysis indicates that change in SMAM in different states of India during 2001 and 2011 can be attributed to the various local and state-specific factors. The research recommends the further investigation and identification of the local and state-specific factors responsible for significant increase in mean age at marriage in North Indian states and very little increase or decrease in the same in south and northeast states of India.

The change in marriage timing in a state is a function of the factors operating at two different levels. There are some factors which are same in intensity in all the states such as federal government policies or laws in the central list. Like Last decade saw many policies at national level combating child marriages. Population policy of 2000 set a goal of eliminating child marriages and promoting delayed marriages. On this line there were many other policies and programs such as National Youth Policy, 2002; National Policy for Empowerment of Women, 2001; *Kishori Shakti Yojana*, 2001; National Plan of Action for Children, 2005; *Bal Vivah Virodh Abhiyan*, 2005- a countrywide awareness raising campaign against child marriages- and Prohibition of Child Marriage Act, 2006. Also, there are state-specific factors- mostly socio-economic factors or policies of state governments- that vary from state to state and also union government policies which are implemented by states did not have equal

impact on all the state because of different level of implementation. In some states, coupled with other state-specific policies, implemented by state governments, and improvement in socio-economic indicators, the central government policies had higher impact. *Mukhya Mantri Kanyadan Yojana* in Madhya Pradesh, *Mukhya Mantri Kanya Vivah Yojana* in Bihar, and Girl Child Protection Scheme in Andhra Pradesh are some examples of schemes by states governments aimed at promoting delayed marriages. In some states, where the mean age at marriage was already very high, there were no extra efforts to raise the marriage timing of women, thereby, resulting into increase in early marriages. Shift-share analysis decomposes the changes in SMAM to find out the degree to which these changes might be attributed to state level or national causes- measured by regional, cohort and national effect components.

The analysis makes it clear that some states, namely, Uttar Pradesh, Madhya Pradesh, Rajasthan, Bihar, Chhattisgarh and Arunachal Pradesh have some strong regional factors that are leading them perform better. Some other states such as Goa, Kerala and Tamil Nadu from south India and Nagaland, Manipur, Tripura, Mizoram, Assam, Meghalaya and Sikkim from south India have specialized in some dragging forces. Had these factors been absent, these states would have performed much better. As indicated by the study, the other remaining states do not have very strong state-specific factors which could be held responsible for any great change on marriage timing.

India aspires to achieve gender equality, empowerment of women and all girls and quality education and healthy lives for all by 2030 as a part of sustainable development goals (SDGs) under post- development agenda of United Nations. Age at marriage and these goals are linked with a positive feedback mechanism where they reinforce each other. Therefore, promoting delayed marriages should be an integral part of development agenda.

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