

**AN EXAMINATION OF TRENDS IN AGE AT  
MARRIAGE, CONSUMMATION, AND FIRST BIRTH IN  
FOUR LARGE STATES OF INDIA**

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Jawaharlal Nehru University in Partial Fulfillment of the  
Requirement of the Award of the Degree of*

**MASTER OF PHILOSOPHY**

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*Dedicated*  
*To*  
*Chotomama (Uncle)*  
*and*  
*Babunmaa (Aunty)*

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# *Chapter 1*

*Introduction*

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## CHAPTER 1

### INTRODUCTION

#### 1.1 INTRODUCTION

In recent years, social scientists, mostly demographers, have been deeply concerned about the rapid growth of population in developing countries and their main focus is on the consequences of high fertility. Davis and Blake (1956) listed a number of variables, commonly known as “intermediate variables” which affect fertility and hence population growth. “Age of entry in sexual union” is an important variable among them, which affects the exposure to intercourse, i.e., the risk of pregnancy and hence fertility. In India, marriages are almost universal in nature and sexual relations outside marriage are not socially acceptable. So the births are counted legitimate within marriage only. Therefore, in India, marriage is the only social institution, which allows reproduction, family formation and leads to kinship organisation to the human being.

According to the Encyclopedia of Social Sciences, marriage is a relationship within which sexual intercourse is legitimate when a woman who cohabits with a man has a legitimate status in relation to that man only if she is known to be married to him (Lowie, 1993). So marriage is a legal union of persons of opposite sex. The legality of the union may be established by civil, religious or other means as recognised by the laws of a particular country. It has been pointed out that early age at marriage gives woman a longer reproductive life span and more risk to pregnancy and higher level of fertility. In some societies consummation takes place immediately after the marriage but in India there is often a marked gap between marriage and consummation, i.e., effective marriage. The *Grhyasutras*, while dealing with the marriage rites, referred to a rite called *Cathurthikarma*, which has to be performed on the fourth day of marriage and which involves the consummation of marriage (Kapadia, 1966). This cultural practice prevails where a girl gets married before menarche but starts cohabiting with her husband after attaining puberty. In case of child marriages,

“..... conjugal relations are generally preceded by a second ceremony called *gauna* or *vida*. Between the time of marriage and *gauna* the bride lives with her parents”(Agarwala, 1977; p.87). There is much apprehension about the possibility of her giving birth earlier than a full year after marriage, for only a period of ten months provides clinching evidence that she was a virgin at the time of marriage. It has been observed that 95 percent of Muslim marriages were consummated within twenty four hours but among Hindus the median delay was three months, with only 25 percent of couples having sexual relations within the first month (Caldwell *et al*, 1983). Therefore, a raise in woman’s age at marriage is basically the effort to raise the age at consummation, because lower age at consummation and consequent child birth is deemed to be harmful for woman and her children. Lower age of mother has adverse effect on the health of the mother and most of the complications at the time of the pregnancy and birth occur among young mothers. Besides, infant mortality is high among births to young mothers.

The Child Marriage Restraint Act, commonly known as the *Sarda Act*, was introduced in 1929 to restrain the child marriage that disallowed marriages of male under 18 years and a girl under 14 years of age, considered as child marriage. Later, in 1978, the act was amended and the minimum age for marriage was raised to 21 years for boys and 18 for girls because it was felt these would be the ages at which physical and mental maturity is reached generally (Mathew, 2002).

There has been a marked rise in the woman’s age at marriage in recent years, mostly during the last few decades. The mean age at marriage for female increased by 1.0 year over the decade in 1961-71 (Goyal, 1988), by 1.2 year and 0.9 year between 1971-1981 and 1981-91 respectively (Zavier, 2002).

There is a reason to believe that a small advance in age at marriage does not materially effect the age of woman at birth of her first child. In two Brahmin groups, two investigations inquired into the question on the basis of maternal and child birth data for two or three generations (Ghurye, 1984). These found that though the

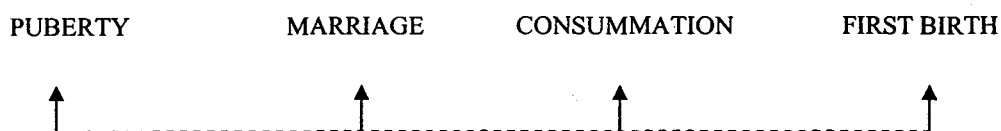
woman's age at marriage had advanced by about three years in three generations, her age at first birth had remained mostly the same. Thus, the gap between woman's age at marriage and birth of the first child is a poor index of the pace of child bearing if the consummation or the effective marriage takes place at a higher age after a formal marriage. So the first birth interval could effectively be considered as the gap between the age at consummation and age at the first birth in the Indian context. But again the cultural differences influence the length of first birth interval. Generally, earlier the first marriage, the longer the waiting time for first conception, even though the overall relation between the age at marriage and the age at first birth is positive.

It is also notable that the age at marriage is strongly influenced by a variety of social, economic and demographic factors like place of residence, religion, caste, standard of living, educational level of the woman, employment status etc. So the overall rise in woman's age at marriage may plausibly be caused by a secular rise in the age at marriage or be attributable to change in characteristics of woman, especially education. If the overall rise in woman's age at marriage has occurred with the same magnitude among all the women irrespective of the educational level, then time is the contributing factor, which caused the change. But the socio-economic conditions of the society have also changed over time and this change could, in turn, cause a rise of marriage age for women.

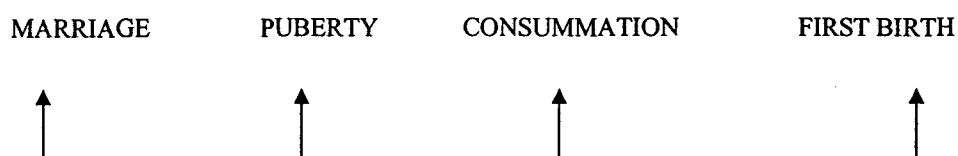
## **1.2 OBJECTIVES**

The present study seeks to examine and explain the trends in woman's age at marriage, age at consummation, age at the first birth and the trends in the gap between age at marriage and consummation. Schematically, these can be depicted as follows depending on whether the formal marriage takes place after or before puberty:

(1) Marriage after puberty:



(2) Marriage before puberty:



In India, there is a gap between age at marriage and consummation and a noticeable trend has been observed in the rise in woman's age at marriage. The specific objectives are:

1. To assess the trends in woman's age at marriage, age at consummation, age at first birth, and the gap between woman's age at marriage and age at consummation in the recent decades.
2. To examine the influence of socio-economic and temporal factors on woman's age at marriage, consummation, age at first birth and the gap and estimate the extent to which the rise in age at marriage is attributable to changes in socio-economic structure and to purely temporal factor.

### **1.3 THE STUDY AREA**

The concept of Child marriage and *Gauna* are mostly prevalent in north-central region in India. Therefore, the study area has been restricted to four north-central states, viz. Bihar, Uttar Pradesh, Rajasthan and Madhya Pradesh where woman's age at marriage is relatively low in comparison to other states in India (Fig 1.1). To

examine the trend in age at marriage, consummation and first birth in these states, data have been used from the National Family Health Survey-2 (NFHS-2), 1998-99. Data provided from these states in NFHS-2 are before the administrative division in 2000. Therefore, background characteristics in the area from the 2001 census data for states; Bihar, Uttar Pradesh and Madhya Pradesh include Jharkhand, Uttaranchal and Chattisgarh respectively. It is also noticeable that in these states age at first marriage and the age at effective marriage, i.e., consummation is not the same and wide gaps between these are observed.

### *Characteristics of the Study area*

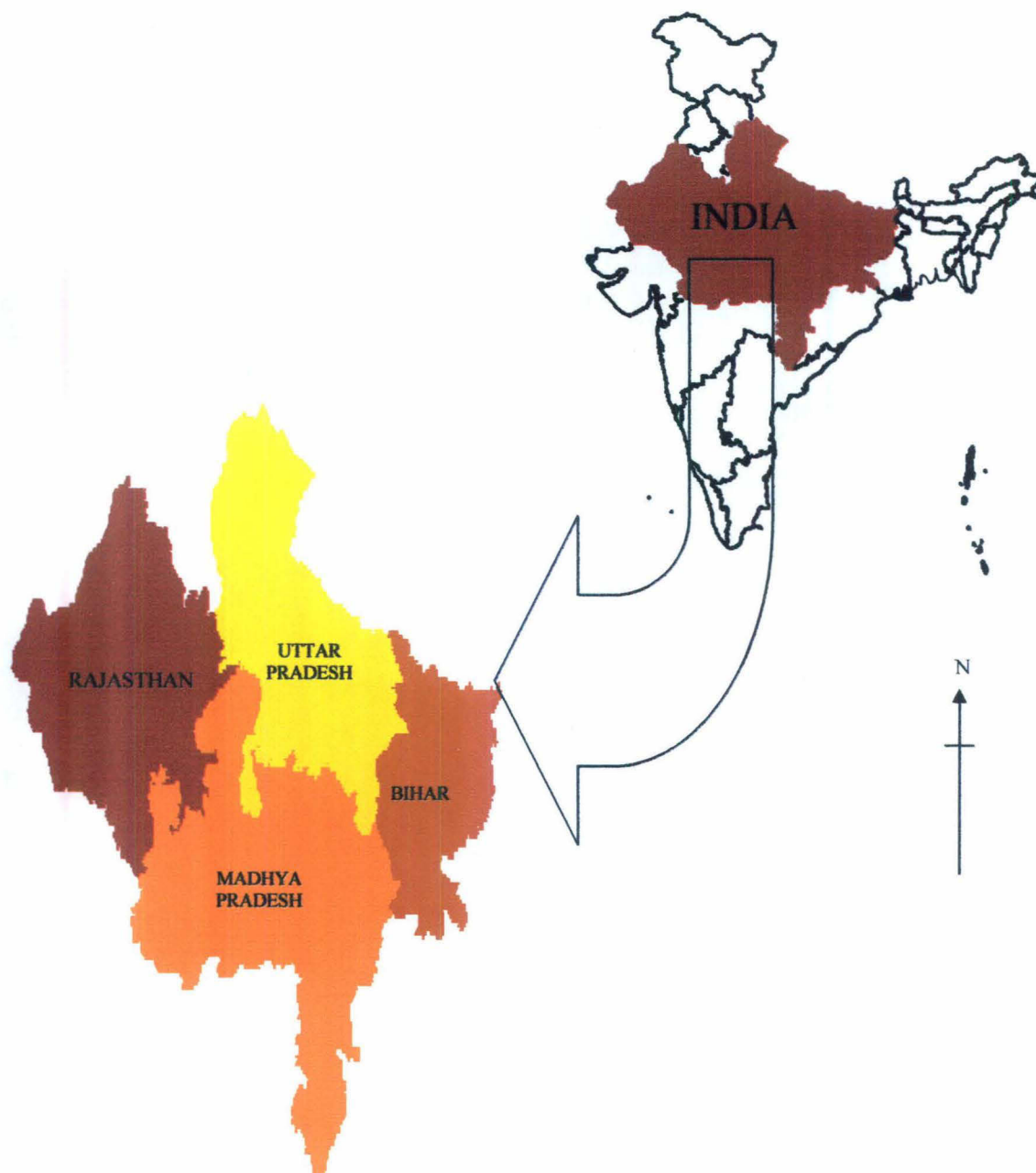
These states are backward from the development point of view and commonly known as BIMARU (Bihar, Madhya Pradesh, Rajasthan, Uttar Pradesh) states in India. According to the 2001 census, together these four states consist more than one third (41.1 percent) of India's total population and more than one third (39.6 percent) of India's total land area (India, Registrar General, 2004). The socio-economic and demographic characteristics of these states are not as good as the southern states and the level of development is lagging behind by forty years (Table 1.1).

There is no marked decline in the decadal growth rate in these states during 1971-81 and 1981-91. But there is a large increase in the decadal population growth rate in undivided Bihar (27.3 percent) in 1991-2001 compared to 23.4 percent in 1981-91 (India, Registrar General, 1998; India, Registrar General, 2004).

Population density (persons per sq. km) is higher than the national average (324) in Bihar (632) and Uttar Pradesh (593) because these states are located in the Great Indian Plains and the fertile land with flourishing agricultural sector. On the other hand, Madhya Pradesh with undulating plains and rugged topography and Rajasthan with the Great Indian Desert have very low population density, 183 and 165 respectively (India, Registrar General, 2004).

Figure 1.1

**STUDY AREA**  
**(BIHAR, UTTAR PRADESH, RAJASTHAN AND MADHYA PRADESH)**  
**1991**



MAP NOT TO SCALE



**Table: 1. 1**  
**Socio-economic and demographic characteristics of Bihar, Uttar Pradesh, Rajasthan, Madhya Pradesh and India**

	States				
	Bihar (Including Jharkhand)	Uttar Pradesh (Including Uttamchal)	Rajasthan	Madhya Pradesh (including Chattisgarh)	India
<b><u>Demographic Characteristics</u></b>					
Total Population, 2001 <sup>1</sup>	109944338	174687270	56507188	81181826	1026443540
Percentage to Total Population of India, 2001 <sup>1</sup>	10.71	17.02	5.51	7.9	100.0
Total Area (in sq. km), 2001 <sup>1</sup>	173877	294411	342239	443436	3166285
Population Density (persons/ sq .km), 2001 <sup>1</sup>	632	593	165	183	324
Population Growth (in %), 1991-2001 <sup>1</sup>	27.29	25.57	22.12	27.15	21.29
Percentage of Urban Population, 2001 <sup>1</sup>	13.35	21.02	23.4	24.82	27.8
Sex Ratio, 2001 <sup>1</sup>	924	901	921	937	933
Crude Birth Rate, 1999 <sup>2</sup>	31.5	32.8	31.1	31.1	26.1
Total Marital Fertility Rate, 1999 <sup>2</sup>	5.5	6.1	5.1	5.1	4.7
<b><u>Social characteristics</u></b>					
Total Effective Literacy Rate (in %), 2001 <sup>1</sup>	48.6	57.0	60.4	64.0	64.8
Female Effective Literacy Rate (in %), 2001 <sup>1</sup>	34.6	43.1	44.0	50.7	53.6
Female Singulate Mean Age at Marriage (SMAM), 1991 <sup>3</sup>	17.5	18.0	17.5	17.8	19.3
<b><u>Economic and infrastructure characteristics</u></b>					
Female Labour Force Participation Rates (in%), 2001 <sup>1</sup>	20.7	17.1	38.2	35.0	31.6
Percent of labourers outside agriculture, 2001 <sup>1</sup>	25.6	34.5	34.1	27.2	41.8
Percentage of Population Below Poverty Line, 1999-2000 <sup>5</sup>	42.6	31.2	15.3	37.4	26.1
<b><u>Health Characteristics</u></b>					
Infant Mortality Rate (per 1,000 live birth), 2000 <sup>2</sup>	62	83	79	88	68
Child Mortality Rate (0-4 years), 1999 <sup>2</sup>	20.6	28.1	24.9	30.4	20.4
Maternal Mortality Ratio (per 1,00,000 live births), 1997 <sup>4</sup>	452	707	607	498	407

Source: <sup>1</sup> India, Registrar General, 2004

<sup>2</sup> India, Department of Family Welfare, 2003

<sup>3</sup> IIPS and ORC Macro, 2000

<sup>4</sup> India, Registrar General, 1999

<sup>5</sup> India, Planning Commission, 2002

According to the 2001 census, Bihar has low percentage of urban population (13.4 percent) followed by Uttar Pradesh. These four states have lower percentage of urban population than the all India level, i.e., 27.9 percent (India, Registrar General, 2004).

Sex ratio is not very high in these states except in Madhya Pradesh (937) and below the national average (933). It is more than 920 in Bihar (924) and Rajasthan (921) but low in Uttar Pradesh (901). It shows that the status of women in these states is not high and female infanticide or sex selective abortions are possibly practiced (India, Registrar General, 2004).

The birth rate is also very high in these four states. The highest birth rate among the Indian states is observed in Uttar Pradesh (32.8). The other three states, Bihar (31.5), Madhya Pradesh (31.1), Rajasthan (331.1) have also experienced higher birth rates compared to national level, i.e., 26.1 (India, Registrar General, 1999).

Total Marital Fertility Rates (TMFR) are also higher in these states compared to India (4.7). It is the highest in Uttar Pradesh (6.1) and the other three states also have more than 5.0 as the Total Marital Fertility Rate. It also indicates the lower age at marriage with a longer reproductive span for the female in the region (India, Department of Family Welfare, 2003).

Educational level of women as seen from the female literacy rate is low in these states compared to all India level (53.6 percent) at the time of the census 2001 (India, Registrar General, 2004). Among the four states, Bihar has the lowest female literacy rates (34.6 percent) and Madhya Pradesh has the highest (50.7 percent), yet well below the national average and the other two states, Rajasthan (43.3 percent) and Uttar Pradesh (43.1 percent) have moderate level of female literacy rate in comparison with other two states in the region.

According to the 1991 census, female Singulate Mean Age at Marriage (SMAM) was very low in these states. Rajasthan and Bihar had the lowest female mean age at marriage (17.5 years). Other states also had lower mean age at marriage, Uttar Pradesh (18.0 years) and Madhya Pradesh (17.8 years). Whereas, the mean age at marriage of women in India (19.3 years) was also low (IIPS and ORC Macro, 2000).

The 2001 census data reveals that female labour force participation rate is high in Rajasthan (38.2 percent) and in Madhya Pradesh (35.0 percent) due to the adverse topographic condition prevailing in the states, whereas, Bihar (20.7 percent) and Uttar Pradesh (17.1 percent) have lower female labour force participation rate, even lower than the national average of 31.6 percent (India, Registrar General, 2004). Labour force participation rate in other than agricultural sector is not very high in these states and even lower than the national average (41.8 percent).

Similarly, percentage of population below the poverty line is higher in Bihar (42.6 percent), Uttar Pradesh (31.2 percent) and Madhya Pradesh (37.4 percent) than India (26.1 percent). Majority of population depend on the agricultural sector. Population density is high in Bihar and Uttar Pradesh as well as the agricultural land is limited, which causes over employment in agricultural sector and it leads to the increase in the marginal labours. In Madhya Pradesh agricultural land is insufficient due to rugged topography, therefore, agricultural sector as well as non-agricultural sectors are also not developed, which causes a large number of people to stay below the poverty line (India, Planning Commission, 2002). Only Rajasthan (15.3 percent) has lesser percentage of people below the poverty line than the national average, because people are more involved in secondary and tertiary activities.

The health conditions in the region are miserable. The mortality rate is high in these states. The infant mortality rate (IMR), which indicates the prevailing health condition of the state, is higher in Uttar Pradesh (83), Rajasthan (79), Madhya Pradesh (88) and lower in Bihar (62) than the national average (68). However, the national average is also very high compared to other developed countries (India, Department of Family Welfare, 2003).

A higher proportion of children (age between 0 to 4 years) die in all the states in the region than in India (20.4 per 1000), the level is the highest in Madhya Pradesh (30.4 per 1000). It depicts that the social and economic conditions that prevail in the area are not

favourable for this vulnerable section of the society (India, Department of Family Welfare, 2003).

Moreover, maternal mortality is also high in these states, indicating inadequate maternal and child health care facilities. Lower age at the time of child birth, untrained birth attendants, unhygienic condition at the place of birth, lack of pre natal and post natal check up lead to the high maternal mortality in the region. It is the highest in Uttar Pradesh (707) and the lowest in Bihar (452) and it is higher than the national average (407) in all four states in the area (India, Registrar General, 1999).

#### **1.4 ORGANIZATION OF THE DISSERTATION**

The dissertation is divided into six chapters. **Chapter-1** gives an introduction with the concepts about marriage, consummation and age at first birth. It also includes objectives of the study and a description about study area. **Chapter-2** presents the review of existing literature and related findings in earlier studies. **Chapter-3** discusses the conceptual framework with a tentative model showing the influences of socio-economic and demographic factors on age at marriage, consummation and first birth along with hypothesis, data sources, methodology and variables. **Chapter-4** shows the trends in woman's age at marriage, consummation and first birth. It also discusses the trends in the gap between woman's age at marriage and age at consummation in four major states in India, viz., Bihar, Uttar Pradesh, Rajasthan and Madhya Pradesh. **Chapter-5** deals with differentials of age at marriage, consummation and first birth by socio-economic and demographic characteristics of women. **Chapter-6** includes regression analysis of the age at marriage, age at consummation and first birth with socio-economic characteristics. **Chapter-7** presents conclusion, summary and policy implications.

## *Chapter 2*

*Review of Literature*

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## CHAPTER 2

### REVIEW OF LITERATURE

Demographers and social scientists are concerned about the increasing high fertility and the factors responsible for it. Early marriage in most traditional societies is an important contributor to the high fertility. Marriage is the social institution in India, which signals entry to reproduction. But due to social customs and prevalence of child marriage, age at marriage for girls is very low in India, many girls are married before menarche though actual cohabitation starts after they attain the puberty and a ceremony (*gauna or vida*) has been performed. On the other hand, woman's age at first birth is also important from the health point of view, because young mother is not physically and mentally mature to bear a child. Researchers have pointed out various factors, which influence woman's age at marriage, consummation and first birth, like educational status, place of residence, religion, standard of living, employment etc. A number of studies tried to find out the trends in woman's age at marriage as well as consummation and first birth. Here a brief review has been made of the findings of the various studies on woman's age at marriage, consummation and first birth.

Kapadia (1966) discussed about marriage and family structure, including age at marriage in India from a historical perspective. The existence of child marriages in ancient India has been found in *Baudhyana Dharmasutra*, *Grhyasutras*, *Manusamhita* and to keep a girl in house after attaining puberty was considered a sin for her father and brother. He has discussed the evolution of the Child Marriage Restraint Act (1929) and how it has been implemented. But in Hinduism age at marriage is not as important as the age at consummation because consummation starts after menarche. He tried to estimate the age at cohabitation for Hindus and carried out a survey on 294 persons. The study shows the age of the wife is below 13 years in 17 percent cases and in 70 percent cases the age of the wife is between 14 to 19 years. In 21.9 percent cases consummation began immediately after the marriage and in 25.3 percent cases within one month. So it confirms the prevalence of the child marriage in the society.

Ghurye (1984) enlightens the area of marriage from sociological point of view. He suggested that women should pass through puberty before they get married. But among Hindus, marriage occurred before the girl attains her puberty. Early marriage is not recommendable largely due to consequent early maternity. At early age woman is not fully prepared to take physical and mental strain of maternity. He also observed in two Brahmin groups that increase in age at marriage does not materially affect woman's age at first birth. Age at marriage has been advanced by three years in three generations but age at first birth has increased by only six months over the time. Therefore, he suggested a higher age limit for marriage at which maternity may safely begin. He recommended that male mean age at marriage should be above 25 years and for females it should be 22 years and lower limit of age at marriage should be 21 years and 16 years for boys and girls respectively. There should be at least three years gap between marriage and first birth in order to enjoy the mutual companionship of the couples and understand the future responsibility.

Agarwala (1977) has worked on women's age at marriage and tried to show the trends and differentials in age at marriage. The study was based on census data from 1881 to 1971; he used Hajnal's method to calculate the Singulate Mean Age at Marriage. He discussed the customs related to marriage and consummation and found that 80 percent of women were married before reaching the age at 20 years. The average decennial rise in female mean age at marriage between 1896 to 1916 was 0.55 years and for males, it was 0.21 years. The *Sarda Act* has influenced women's age at marriage and it shows that the women's age at marriage increased only by 0.05 years in 1951-61 but in 1961-71 it increased by 1.8 years. Regional variation of the women's age at marriage was also studied and Madhya Pradesh had the lowest mean age at marriage (15.2 years) according to the 1971 census data. The maximum increase in the mean age at marriage has been found in the western zone (1.4 years) and minimum in the central zone (0.8 years) during 1961-71 in India. The difference between various religious groups has also been estimated. The Christians have the highest mean age at marriage followed by Sikhs, Muslims, Jains and Hindus in India. Mean age at marriage is the lowest among the

Scheduled castes. According to 1971 census, age at marriage in urban areas is higher by one year to two years compared to rural areas. Age at marriage of the women with higher education was higher than those who are illiterate or less educated. The female age at marriage was 12.8 years in 1901, which has increased to nearly 17.2 years in 1971. Likewise, the mean age at marriage for male has increased from 20 years in 1901 to 22 years in 1971.

Dandekar (1974) studied the age at marriage for women and pointed out that the age at marriage has increased only four years over the decade 1901 to 1961. She suggested that the implementation of *Sarda Act* specifying the minimum age at marriage ruled out forced sexual intercourse before puberty. The study shows that there is a reduction in birth rate as a result of raising age at marriage above puberty. Further rise in age at marriage through better education, employment and general improvement in the standard of living also led to the reduction in the fertility rate in the country. The reasons for the low age at marriage for the woman were insecurity of the girls in the community, treated as a burden to the parents etc. There is no financial security for women in India, therefore, they are totally dependent on their father-husband-son in their life and each of them tried to shift the burden to another. Education also helps to raise the age at marriage but in rural areas schools are far away and parents are not allowing their daughters to cross that much distance to attend the school after attaining puberty so the drop out rates are very high for females at the age of 12 years and above. Therefore, she suggested to implement rules and legislation to raise the age at marriage and also to improve the social condition which helps to increase woman's age at marriage as well as to reduce the birth rate and over all fertility rate in the country.

Goyal (1975) examined the shift in age at marriage in India between 1961 and 1971. He used Hajnal's method to calculate the mean age at marriage from the 1961 and 1971 census data. During 1961-71, there is an increase in age at marriage from 16.1 to 17.2 years for females and 21.4 to 22.2 years for males. The mean age at marriage for both



male and female is the highest in the southern zone and the lowest in the central zone. The increase in mean age at marriage for female is the maximum in the western zone (16.4 to 17.8 years) and minimum in the central zone (14.7 to 15.5 years). There is a marked declining trend in the gap between male and female mean age at marriage between 1961 and 1971 for the country as a whole somewhat, from 5.3 years to 5.0 years, and the decline is larger in the urban areas (from 5.6 years to 5.1 years). Kerala recorded the highest mean age at marriage and in Madhya Pradesh was the lowest for both sexes in 1961 and 1971. States with higher than national average for male age at marriage have also higher female mean age at marriage. Mean age at marriage for males and females is higher in urban sector compared to rural areas. Uttar Pradesh and Madhya Pradesh have larger difference and Bihar and Rajasthan have lower difference than the national figure (5.6 years in 1961 and 5.1 years in 1971) between mean ages at marriage in both the sexes. There is an increasing trend in mean age at marriage for both sexes in all the states except for females in Assam over the decade 1961-71. The increase in mean age at marriage has been greater for females as compared to males in all the states in India except Bihar and Orissa and the increase is marginal in Rajasthan and Kerala.

A cohort analysis has been carried out on female age at marriage by Vemuri (1989) on the 1971 and 1981 census data. To analyse Median Age at Marriage (MAM), birth cohorts of women born in 1930's, 1940's and 1950's had been taken into account to examine the change in age at marriage before and after independence. It is also calculated across the educational levels and religions. The study reveals that MAM has increased from 15.4 years to 16.5 years from 1971 to 1981 and 97 percent women are married by age 29. Christians (18.7 years in 1971 and 19.4 years in 1981) show the highest MAM compared to Hindus and Muslims (16.0 in 1971 and 17.4 in 1981). MAM has increased in all the cohorts in 1981 and women with graduate degree had 21.9 years in rural areas and 22.1 years in urban areas and illiterate women in rural areas had 15.9 years and compared to 16.5 years in their urban counterpart. But most surprisingly, MAM has not changed much after independence and proportion married by different age groups remain unchanged across different religious groups, mainly Hindus and Muslims. But an

increase in MAM among the women below age 20 years has given the hope of rise in age at marriage in future.

Zavier (2002) reassessed the trends and levels in the shifts in Indian marriages with the levels of female education by using the 1981 and 1991 census data in major states in India. To examine the trends, he used SMAM and decomposition of median age at marriage by the level of education of the women. The study shows below 1.5 percent remain spinsters in all the states (except Kerala and Goa) and more than 3 percent of women in matriculate but below graduate and a little more than 5 percent of women in graduate and above remain single at age 50 and above in 1981 and 1991. Urban women are delaying their marriage by 2 years more than the rural women and Goa has the highest mean ages at marriage, 22.9 years and 24.2 years respectively, whereas, Rajasthan has the lowest, 16.1 years and 16.8 years in 1981 and 1991 respectively. Mean age at marriage has increased all over India with the increase in the educational level and in Rajasthan it increases from illiterate (15.8 years) to graduate and above (22.7 years). It has been seen that age at marriage has increased by 1.9 years and 1.3 years among women with graduate and above degree in urban and rural areas respectively and median age at marriage has increased by 2 years in Andhra Pradesh, Goa, Himachal Pradesh, Kerala, Maharashtra, Madhya Pradesh, Rajasthan and West Bengal over the past 30 years and more. About 68 percent change in median age at marriage was contributed by the change in the educational level of the women. Except Goa, Gujarat, Punjab, Kerala, rise in educational level did not contribute much to improvement in the age at marriage for females. The improvement in literacy levels during 1961 to 1991 contributed only 31.5 percent of the total increase in the median age at marriage.

A study has been conducted in two villages, viz., Golatgaon and Kolghar in Maharashtra by Hirmani (1976) to show the trends in age at marriage. The sample size was 20 percent of the total population of these villages. It shows there were large number of early marriages which were unaffected by the Child Marriage Restraint Act (1929). The mean

age at marriage for women was 11.82 years and 11.89 years in Kolghar and Golatgaon respectively. If the age at puberty is presumed to be 12 years, the females who were married before that age were 46.3 percent and 57.14 percent in Golatgaon and Kolghar respectively. The study reveals that the trends in age at marriage differ with the caste system in Kolaghar where higher age at marriage has been found among Service castes and Brahmins. In Golatgaon, Buddhist females marry at an early age compared to the females of Kolaghar village of the same religion. So it indicates a traditional behavioral pattern of early marriage among females despite the existence of forces of social changes in the society. This traditional trend of early marriages for women confirms the ineffectiveness of legal provision.

A study among the female birth cohort of 1962-72 (age group of 13 to 23 years in 1985), has been done by Nair and Koteshwar (1987). The study covered six southern districts in Karnataka and tried to show the trend in female age at marriage. The results reveal very slow increase in the female age at marriage in rural Karnataka and shows that pre-puberty marriages are more common and no marked increase was found for the female age at marriage in the region. The median age at marriage for the girls has increased from 11.6 years in 1962 to 14.0 years in 1972 and further increased to 16.0 years in 1985. So the majority of girls in rural area are getting married at a very early age and 63 percent of girls are getting married before reaching the age of 14 years. They also tried to focus on the socio- economic causes, which influence the low age at marriage for girls. So at the end it is clear that the Child Marriage Restraint Act remains on paper only.

A study has been conducted to find out the pre-puberty marriages in Karnataka, which covered 560 households in 22 sample villages in the Belgaum district in Karnataka in 1990 by the Population Research Center, Dharwad (Rajarama and Jadar, 1993). It included 44 child marriages in the study area. The prevalence rate of pre-puberty marriages was 7.8 percent in that area. It is higher among girls with literate fathers (7.1 percent) than among the girls with illiterate fathers (5.0 percent). Early marriages are

common among the higher castes (Lingayats) and socio-economically well-placed sections in the society. It is the highest in nuclear families (14.2 percent) and the lowest in joint families (3.2 percent). Early marriages were more common among cultivators (6.7 percent) than who were landless (3.3 percent). The highest proportion of pre-puberty marriages were recorded in the age group of 5-9 years (45.9 percent) and 16.2 percent of marriages were held as low as 4 years old child. Marriages within kinship network checked the rise in the age at marriage. Surprisingly, 59.4 percent parents, who performed the pre puberty marriage for their daughters, were actually in favour of post-puberty marriage.

Yadav (1971) estimates the trends in marriage age among the girls in India. His study was based on the 1901 to 1961 census data and he calculated the median age at marriage for females in urban and rural areas. The mean ages at marriage for girls in rural and urban areas were 16.1 years and 17.1 years respectively. He observed that few women were married at a younger age, whereas, large number of women marry between 18 years to 22 years. But in India the age reporting is highly distorted due to sharp digital preferences. The study has focused on age at consummation, which shows that there was lower age at marriage but higher age at consummation. The median age at marriage shifted from 15.6 years in 1901 to 18.0 years in 1961 for girls in India. Therefore, proportion single has increased from 8.6 in 1931 to 17.0 in 1961 for age group 15 to 24 years. According to the 1961 census data, the median ages at marriage for girls in Uttar Pradesh (16.8 years), Bihar (16.6 years), Madhya Pradesh (16.3 years) and Rajasthan (16.6 years) were lower than all India (18.0 years) level.

A district level analysis has been done by Goyal (1987) on nuptiality trends in Rajasthan on the census data from 1961 to 1971. Rajasthan is one of the major states in India with the lowest level of age at marriage. He examined the trends in marriage and calculated the Singulate Mean Age at Marriage (SMAM) with the help of Hajnal's method. It shows there was decline in the early marriages between 1961-81 in all districts in the state. But

there were inter-district variation in the prevalence of early childhood marriages over the years. Two districts, Tonk and Bhilwara were identified with high prevalence of child marriages. Generally, it has been found that the decline was higher in all those districts where initially early marriages were performed commonly. For males and females, mean age at marriage has increased from 19.45 years in 1961 to 20.41 years in 1981 for males and 14.16 years in 1961 to 16.77 years in 1981 for females in Rajasthan. But the tempo of changes in age at marriage for both the sexes remains lower than the desired level in the state.

Srivastava (1983) has conducted a study in Uttar Pradesh on Child marriage. There he tried to focus on how the socio-economic factors were influencing the age at marriage mainly for girls in the area. It was based on the 1961 and 1971 Census data and the methodology mainly used was cost-benefit framework. It analysed the patterns of the variation in marital status by age using Newton's method. The study depicts that the education, urbanisation, income level, female work participation in agricultural sector, development in non agricultural sector have strong influence to determine the women's age at marriage in Uttar Pradesh mainly on Child marriage. It was confirmed that child marriages were well practiced in the state and in 48 districts out of 54 districts. It shows there were negative influences of female education and urbanisation on child marriage at two points of time ten years apart, i.e., 1961 and 1971. Male work participation in non-agricultural sectors also has strong negative influence on child marriage. But the main finding was that the participation rate of females in agricultural activities has been found to provide a strong economic motivation for child marriage. So he suggested shifting the female agricultural workers to other works through education, which may help to raise the age at marriage for women and hence restrict the child marriage.

Caldwell *et al* (1983) studied the causes of marriage change in southern India. The average age at marriage of female has been rising, which leads to the overall decline in fertility level in the region. They pointed out that girls are generally married before

reaching puberty because afterwards she is considered impure. They observed that the mean age at marriage for women in India rose from 13 years to 17 years and in Karnataka from 15 years to 18 years from 1921 to 1971. The study confirms the existence of double marriage system. Therefore, there were a child marriage before attaining the puberty and later there were a second marriage following menarche, which leads to consummation. Child marriages are usually a contract rather than a marriage in the study area. In Karnataka, Muslim marriages were consummated within a day but it is three months on an average for Hindus in the state. It was calculated that women under 30 years of age have median age at marriage of 18 years and it varies with socio-economic conditions in the society. It was 15 years for Harijans, 17 years for Vokkaligas, 18 years for Jains and Muslims and over 20 years for Brahmins. Women with higher level of education opted for late marriages but in most cases they were removed from school after attaining puberty even a day before the examination. But cases were different for Brahmins and some higher educated families. The main cause to raise the female age at marriage was the danger of having children immediately after attaining puberty, which causes maternal and infant death.

Child marriages are dominant in Indian society. Nagi (1989) tried to find out various aspects, which influenced child marriages in Chittourgarh, Udaypur and Bhilwara districts in Rajasthan. The study was based on a primary survey of 200 respondents of 50 households in four villages in three districts in Rajasthan. The study reveals that the most important causes of child marriages are wish of grand parents (78 percent), cost of marriage (77 percent) and socio-economic beliefs, such as keeping unmarried girls at home is a sin (55 percent) and child marriages are ordained by the God (41 percent). The villagers believe that early marriages are advantageous for health of the mother (54 percent), efficiency of the housewife (54 percent) and good match (38 percent). On the other hand, higher level of education of the head of the household prevents the child marriage in the family. He suggested that mass media play an important role in educating the people about the legal age at marriage but there was a gap between knowledge and practice. The incidence of child marriage was more among poor families.

Rajyalakshmi (1990) focused on the child marriages in India. She has compared the situations prevailing in two states, Rajasthan and Andhra Pradesh, where this custom is culturally and traditionally practiced. In Andhra Pradesh, a southern state, woman's age at marriage is comparatively lower than the other southern states. It has been pointed out that cross cousin marriages are dominant in this state and dowry is prevalent. So it leads to the early marriage for the girls. Both the states perform the child marriage but consummation (*sava* in Andhra Pradesh and *gauna* in Rajasthan) starts after puberty. But most interestingly the socio-economic causes for the child marriages in these two states were almost the same. Girls were married early to keep honour of the word of some dead elders or friends, parents were also interested to perform the marriage of their daughter to get relief of the burden because there were some insecurity feelings coming into their mind mainly when a grown up daughter is going out to the field for work. They also feel that a young bride can easily adapt to the new environment. Young couples also give psychological pleasure to the elderly in the family. Mainly in Andhra Pradesh, cross cousin marriage is performed as a financial adjustment between brother and sisters. In rural areas of both the states, girls were considered as economic assets for in-laws not having any daughter because she can work in the field to earn money for the family. Therefore, they are very keen to take the young bride to home. It has been observed that the ages at marriage for women in these states are low but Andhra Pradesh has higher woman's age at marriage compared to Rajasthan. However, it shows a gradual rise in age at marriage in both the states but it is still very low.

A study has been conducted in four districts, Ajmer, Bhilwara, Chittaurgarh and Tonk in Rajasthan by Jabbi (1986) to evaluate the status of child marriage in Rajasthan. According to the 1971 census, Rajasthan has the lowest age at marriage. The study covered people of age group 20-25 years, who are mostly illiterate. The major findings of the study show that very few people consider marriage below age of 15 years as a child marriage, which depicts the lack of awareness. The general practice of child marriage happened to save the cost of marriage and young girls were married together with elder sisters. There were differences in age at marriage among the cross sections of the society,

all backward castes (Yadav, Kumhar, Nai, Rawat etc.) and scheduled castes (Bagaria, Berwa etc.) have low age at marriage. Scheduled tribes (Bhill and Meena) also reported low age at marriage but it was only due to the exposure to other caste groups. Banjaras practiced late marriages earlier but recently they also started performing child marriages. It is noted that low caste Muslims (Deawalis, Chuta and Mehrat) also practice child marriage. Only Brahmins, Mahajans/ Banias and Rajputs have high age at marriage. The study pointed out that Bagund village of Bhadesar block in Chittaurgarh district has performed marriage of a 15 months old girl. Main reason behind the child marriage is to save the cost of marriage and to keep the young girl away from the opposite sex at that vulnerable age. In Ajmer district, marriage is performed when someone dies in the family to reduce the associated cost of the marriage. To have a two stage marriage (child marriage and *gauna*) also split the expenditure. The study focused on the places where the prevalence of child marriages is very high like Beawa and Kishnagarh in Ajmer, Kotri, Jahazpur, Hurda, Suwara and Budnor in Bhilwara, Deoli, Niwari and Todaraising in Tonk and Rashmi, Budesar, Chotti Sadri and Dengla in Chittaurgarh. Child marriage is decreasing among educated but they made up a negligible percentage.



Rao and Rao (1975) conducted a study in Belgaum and Dandeli districts in Karnataka on ideal age at marriage. Data has been collected from a randomly selected sample of 585 unmarried college students through a questionnaire with the help of respective teachers of the colleges. The study reveals that a majority of students prefer 25 years as the ideal age at marriage for a boy, a brother and themselves but for a girl and sister, two-thirds of them prefer 21 years or earlier as the age at marriage. The comparison of the ideal age at marriage with the actual age at marriage of their parents shows nearly 42 percent of mothers were married at 16 years or earlier while none of the student suggested it as an ideal age at marriage. Similarly, 4 percent fathers were married at the age of 23 years or earlier and only 11 percent boys think that that is the ideal age at marriage. A higher percentage of boys suggested early age (21 years or earlier) for a woman's marriage while girl students prefer to get married at a later age (22 years or later). It is surprising that most of the male students suggested that female should get married immediately after

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attaining puberty and only can wait for marriage if she has not completed her desired education. Study reveals a majority of Hindu students prefer later marriage as compared to non-Hindus. It may be due to higher standard of living, higher educational status and living in urban community etc. Therefore, there is a considerable change between parent's age at marriage and the student's attitude on ideal age at marriage. Increase in education, urbanisation, economic development, and industrialization help to raise the ideal age at marriage among college students.

A survey has been conducted on fertility in metropolitan areas in Delhi in 1969-70 by Population Research Center of the Institute of Economic Growth (Goyal, 1988). Data has been collected on the attitude toward the age at marriage, knowledge about the legal age at marriage across the different socio-economic background of 5624 women of the reproductive age group. Only 4.5 percent women reported 18 years for males and 8.8 percent for females as the desirable age at marriage whereas 60 percent reported over 25 years and over 19 years as the desirable age at marriage for male and female respectively. However, 71.2 percent women are not even aware of the law on the minimum legal age at marriage. But majority of women (68.2 percent) are in favour of raising the male age at marriage over 25 years and 66.8 percent were in favour of raising female age at marriage over 22 years. It has been pointed out that the attitude differs towards the desirable age at marriage mainly for female across the different socio-economic groups in the study area. Women aged more than 35 years, considered 19.5 years as the desirable age at marriage for the girls, whereas, women aged below 20 years reported 17.6 years as the desirable age. The vision also widens with increase in the educational levels, 17.6 years for the literate and 21.6 for the respondent with graduate degree. It also increased with the increase in work status, household living index, household's monthly expenditure etc.

A large-scale study has been conducted by Hatti and Ohlsson (1985), to understand the influence of female education on age at marriage in 1980-81. Data have been collected through interview from a stratified sample of 2725 households in Sirsi Taluk in

Karnataka on income, landholding, general living conditions, age, marital status, age at marriage, family size and education. The method adopted to examine the socio-economic influence on age at marriage was marriage cohort analysis. Respondents mostly belong to Havyak Brahmins and Namdhari Naiks and together they constitute nearly 70 percent of the total population of the Taluk. The results show that there was a marked shift in age at marriage mainly among Brahmins. The overall increase in age at marriage for them was 6 years from 16.2 years to 22.2 years while for Naiks it was nearly 3 years from 16.0 years to 19.3 years between 1960 and 1979 and there has been a shift in the length of schooling also. It has been noticed that a larger proportion of Brahmin girls (70 percent) are going to school than earlier while proportion of illiterate remains the same for Naik girls. It shows that education has a direct impact on age at marriage only if length of schooling is beyond 10 years. But for Brahmins, increasing educational level has indirect influence on age at marriage through attitudinal changes, because it increases contact with the world and changes the outlook toward family size, household structure and the timing of the marriage and also influences the parent's outlook at certain extent. It has considered the need of informal education but a large majority of respondents pointed out the need of formal education. Age at marriage of women is higher in nuclear families (20.0 years in 1977, 16.9 years in 1960) than in joint families (18.7 years in 1977 and 16.0 years in 1960) in the area. The study didn't show much impact of schooling on age at marriage but there was a positive change in attitude, which reflects a positive relationship between age at marriage and education.

Sheela and Audinarayana (1997) conducted a survey on work status of women and age at marriage of women in Coimbatore city in Tamil Nadu. Data has been collected from 147 currently married women, among them 75 were non-working and a multivariate analysis and path analysis have been done to show effect of work status on age at marriage. The study reveals that the mean age at marriage is higher for the working women compared to non-working and interestingly mean age at marriage is higher for women who work after their marriage than those who do not. The mean age at marriage for the women who were working at the time of marriage is 25.0 years while for non-workers it is 20.7 years but

for those, who are working after marriage it is 22.5 years and for non-working it is 20.3 years. Age at marriage does vary significantly across the time taken to initiate marriage after menarche, their level of education and the expected level of the bridegroom's education. The correlation analysis depicts that the time taken to initiate the marriage after puberty is closely related to work status, the educational status of the respondent and highly and significantly correlated with their age at marriage. The result shows though the educational status of women is high, it is observed that direct effect on age at marriage is very small, whereas, its indirect effect through time taken to initiate the marriage after menarche is found to be moderately large and the share of direct effect of work status of women before marriage on their age at marriage is observed to be very large as compared to its indirect effect. Finally, the mean age at marriage is higher for the working women than the non-workers but educational status has a larger total effect on age at marriage and it plays a greater role to postpone the marriage after menarche.

Chhabra *et al* (1987) focused on the effect of early marriage on women's health. It has been observed that the women's age at marriages is low in Rajasthan, Uttar Pradesh, Madhya Pradesh and also in Andhra Pradesh. The 1981 census data shows nearly 6.59 percent of girls were married by the age of 14 years and also 43.46 percent in the age group of 15-19 years were married. The capability to a safe delivery for a woman demands that the age at marriage should be more than 18 years. Lower age at marriage also increases the risk of maternal mortality. In India, 43.0 percent of female deaths in age group of 15-14 years are associated with pregnancy and childbearing and over 60 percent women are anaemic. Early marriages also increase the fertility rate. The study mentioned that 10.15 percent increase in total fertility is associated with the mothers of 15-19 age groups. The total fertility is low in rural areas (5.41) than urban areas (4.61) and age at marriage is higher by 2 years in urban areas (20 years) compared to rural areas.

Pandey and Talwar (1987) studied fertility and marriage in rural Uttar Pradesh. Because marriage is the entry to the reproduction so age at marriage determines the reproductive

span of a woman. The study covered 2352 households, which include 2592 eligible couples. The index used for nuptiality is mean age at marriage and it is obtained by asking respondent's age at first marriage for both the spouses. The study reveals that marriage is universal and early marriage is common in the rural areas but consummation starts at later age. Mean age at marriage for the girls and boys were 18.3 years and 15.9 years respectively in the area. But there were differentials in the socio-economic characteristics of the respondents. Age at marriage is the lowest among Hindus (18.3 years for males and 15.9 years for females), Scheduled castes (17.4 years for male and 15.2 years for females), girls from the nuclear families (15.7 years) and among illiterates (18.2 for males and 15.9 year for females). Mean birth interval for the first birth varies from 4.75 years for those with average age at marriage of 12.0 years to 2.0 years for those marrying at age of 19.0 years and above. It varies due to adolescent sterility also. There was postponement of 0.6 years in the age at first birth with the increase of a year in age at marriage.

To determine the birth rates in developing countries, marriage rates and age at marriage are important. In India, marriage is universal in nature and marriage pattern is different from western countries and age at marriage for girls is very low. But various socio-economic and demographic factors are interplaying to determine the age at marriage like, industrialisation, urbanisation, literacy, sex ratio of the unmarried population of marriageable age and per capita income (Malaker, 1975). The study focused on influence of the socio-economic and demographic factors on marriage pattern in India. The study was based on the 1961 census data and singulate mean age at marriage has been calculated by using Hajnal's method. The marriage rates for males (20-40 years) and females (15-35 years) are obtained from age specific marriage rates and estimated number of single in quinquennial age groups in 1961. The study shows the mean age at marriage was the highest in Kerala (26.4 years for males and 20.1 years for females) and the lowest in Bihar (18.7 years for males and 14.3 for females), whereas, national average was 22.2 years and 16.2 years for males and females respectively. Marriage rates for spinsters were high, varying from 13.6 to 26.6, but nuptiality pattern were similar for

both the sexes. Further analysis depicts that literacy, economic activity and male labour force participation in agriculture are highly correlated and sex ratio and urbanisation yield low correlation with mean age at marriage. Interestingly, literacy is highly correlated with marriage for female and female economic activities and sex ratio has some effect but there is no effect of urbanisation on female age at marriage. Literacy level of the women is the best predictor for inter-state nuptiality variation for female population. Similarly, sex ratio has positive association with mean age at marriage of the male and negative effect on female.

Singh (1989) has studied the age of effective marriage of female in rural areas in the eastern Uttar Pradesh. The study was based on the information collected on the effect of socio-economic factors on determinants of fertility in the eastern Uttar Pradesh by Center of Population Studies in Banaras Hindu University in 1988. It has covered 5395 eligible couples of age less than 50 years in three districts, viz., Ajamgrh, Gazipur and Varanasi. He focused on the differentials in age at effective marriage among the caste groups in the area. The study reveals that there is a practice of "double marriage system"- actual wedding and *Gauna* or return marriage. Average age at effective marriage has increased irrespectively in all the caste groups from 1 year to 3 years with the increase in the education level over the period of 1960 to 1985/88. It remains lower for the lower castes (16.65 years) compared to higher castes (17.79 years) with the same duration of schooling. But the results indicate that an increase in the age at effective marriage was universal in all the castes groups over time across the education levels.

Basu (1993) has conducted a primary survey in a multi-cultural slum in Delhi to bring out the difference in the cultural influences on the timing of the first birth. Therefore, she had taken two groups of migrants from Uttar Pradesh and Tamil Nadu who have settled in Delhi. 1220 women of age group 15 years and above have been interviewed and among them 642 were from Uttar Pradesh and 578 from Tamil Nadu. To calculate the first birth interval she had taken the gap between age at consummation and age at first birth instead

of gap between age at marriage and age at first birth. There were large gaps between age at marriage and age at consummation in Uttar Pradesh. The girls were getting married at a very young age, mostly before attaining puberty. But they have started cohabitation with their husband after menarche, which was performed with rituals called *gauna*. But for Tamil women this practice was not prevalent at all. The age at marriage is lower for women from Uttar Pradesh (8.9 years) compared to Tamil women (16.1 years). Surprisingly there was not much difference in age at consummation in the two groups. Age at consummation for women from Uttar Pradesh was 15.0 years, whereas, in Tamil women it was 16.4 years as well as the age at first birth was also the same for both (Uttar Pradesh, 18.7 years; Tamil Nadu, 18.4 years). So the earlier age at marriage has longer period of up to first conception. Therefore, the regional difference in first birth interval is only due to the difference in age at first marriage. But from the health point of view, age at consummation, which signifies the start of sexual relation, is more important than the age at first marriage. Later she tried to examine the socio-economic factors, which influence the first birth interval in both cultural backdrops.

A study has been conducted to examine the difference in the return marriage and age at first birth in Kerala and Uttar Pradesh (Singh *et al*, 1992). Authors have tried to show that formal marriage is not only the entry to the sexual union, actually cohabitation started after *Gauna* or return marriage. Therefore, it is basically the “two stage” marriage process. But this system only exists in the North and Central India and it is nonexistent in Kerala. It is estimated that nearly 30 percent of fertility decline in Kerala is due to increase in age at marriage. Center of Population Studies, BHU, has collected the data from two surveys in Uttar Pradesh in 1978 and 1987. In Kerala, it had been done by Kerala State Bureau of Economics and Statistics and the World Bank in 1980. The survey included eligible couples (both the spouses are alive on survey date and woman is less than 50 years of age) 351 households in one district and 4230 households in another three districts in Uttar Pradesh and 3000 households in three districts in Kerala. The principal interest of the study was to calculate the timing of the first birth. Life table of first birth intervals have been computed and to calculate the net effect of age at marriage

multivariate hazard model has been used. The overall mean age at return marriage has risen by 0.9 years from 1978 to 1987 in Uttar Pradesh, whereas, in Kerala, the overall mean age at marriage in 1980 was two years higher than Uttar Pradesh in 1987. In both the states, the average time of first birth declines when age at marriage increases from a pre-adolescent to post-adolescent age. The median first birth interval varies only by 0.3 months from 1978 to 1987 in Kerala. The first birth interval varies with the age at return marriage. And it is influenced by joint family structure, probability of fetal death, social customs, incidence of adolescent subfecundity etc.

It is well known that lower age at marriage implies higher aggregate rates of fertility and higher rates of population growth and it is also associated with lower rate of school attendance and lower social status. Bloom and Reddy (1986) focused on age patterns of women at marriage, cohabitation and first birth in India and estimate that the mean age at marriage for female and males are below 18 years and 23 years respectively. The study was based on the survey conducted by Bangalore Population Project, 1975 and data was collected from 5200 households on ever-married women of age group of 15-49 years on age at marriage, age at cohabitation, first birth, with various background characteristics. The study area covers five urban and five rural districts in Karnataka. It also enlightens the area of the marriage custom in India, which is mainly practicing the child marriage and marriage is the formal procedure to entry to the sexual union as well as to family building. But formal marriage only does not mean the entry to the sexual union, it is the consummation, which starts after puberty but this practice is slowly dying. The study estimates the median age at marriage was 16.3 years in rural areas and 16.9 years in urban areas and among Christian women, the median age was higher than Hindu and Muslim women. There was no difference in age at marriage and age at consummation for Christian and Muslim women but for Hindu women it is nearly one year. It also shows that age at consummation increases across cohorts, with larger increase in urban areas (1.8 years) than in rural areas (0.75 years) and the decline trends reveal the low prevalence of two-stage marriage system. As the age pattern changes for the age at consummation, it also reflects on the age at first birth. The mean age at first birth has

increased for the younger cohort. The rise in the age at marriage probably would have a small fertility reduction effect if it is taken in terms of age at cohabitation. The multiple regression models show that the more educated women tend to delay their marriage and consummation, relatively to less educated women. The length of the delay is narrow for age at consummation than the age at marriage due to the prevalence of the two-stage marriage system among more educated women. There are significant rural-urban differences in marriage and fertility timing and the greater impact of education on age at marriage, consummation and first birth in the urban areas than the rural areas.

The above studies focused on the trends and patterns and also differentials on woman's age at marriage, consummation and first birth. Various authors examine the socio-economic factors influencing ages at marriage, consummation and first birth. Many have also examined reasons for variations across the country. Moreover, changes over time have also been studied and factors responsible for those investigated. However, socio-economic characteristics also change over time or from cohort to cohort. For example, there has been a rise in the educational level of women. Such changes could impact temporal changes in marriage and consummation patterns. On the other hand, norms and practices about the timing of marriage could also change over time for all sections, a purely secular temporal change. Therefore, it is necessary to examine if the change in age at marriage is due to the changes in the educational level of the women and other socio-economic factors or is a purely temporal factor? The analysis in following chapters tries to focus on these aspects.



## *Chapter 3*

### *Conceptual Framework and Methodology*

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## CHAPTER 3

### CONCEPTUAL FRAMEWORK AND METHODOLOGY

#### 3.1 CONCEPTUAL FRAMEWORK

This chapter mainly deals with the conceptual framework, data source and the methodology of the analysis. There are many studies, which have focused on how the background characteristics and contextual factors influence the woman's age at marriage, age at consummation and age at first birth. It has been noticed that if socio-economic development occurred in the society then there is a rise in woman's age at marriage. The main socio-economic and demographic background characteristics of the respondents discussed by various authors in existing literature are place of residence, religion, caste, educational level of the woman and household standard of living, Apart from all these factors time may also be a factor, which brings changes in woman's age at marriage, age at consummation and first birth. The tentative model schematically shows how various socio-economic and demographic factors affect the woman's age at marriage, age at consummation and age at first birth (Fig.3.1).

##### *3.1.1 SOCIO-ECONOMIC FACTORS*

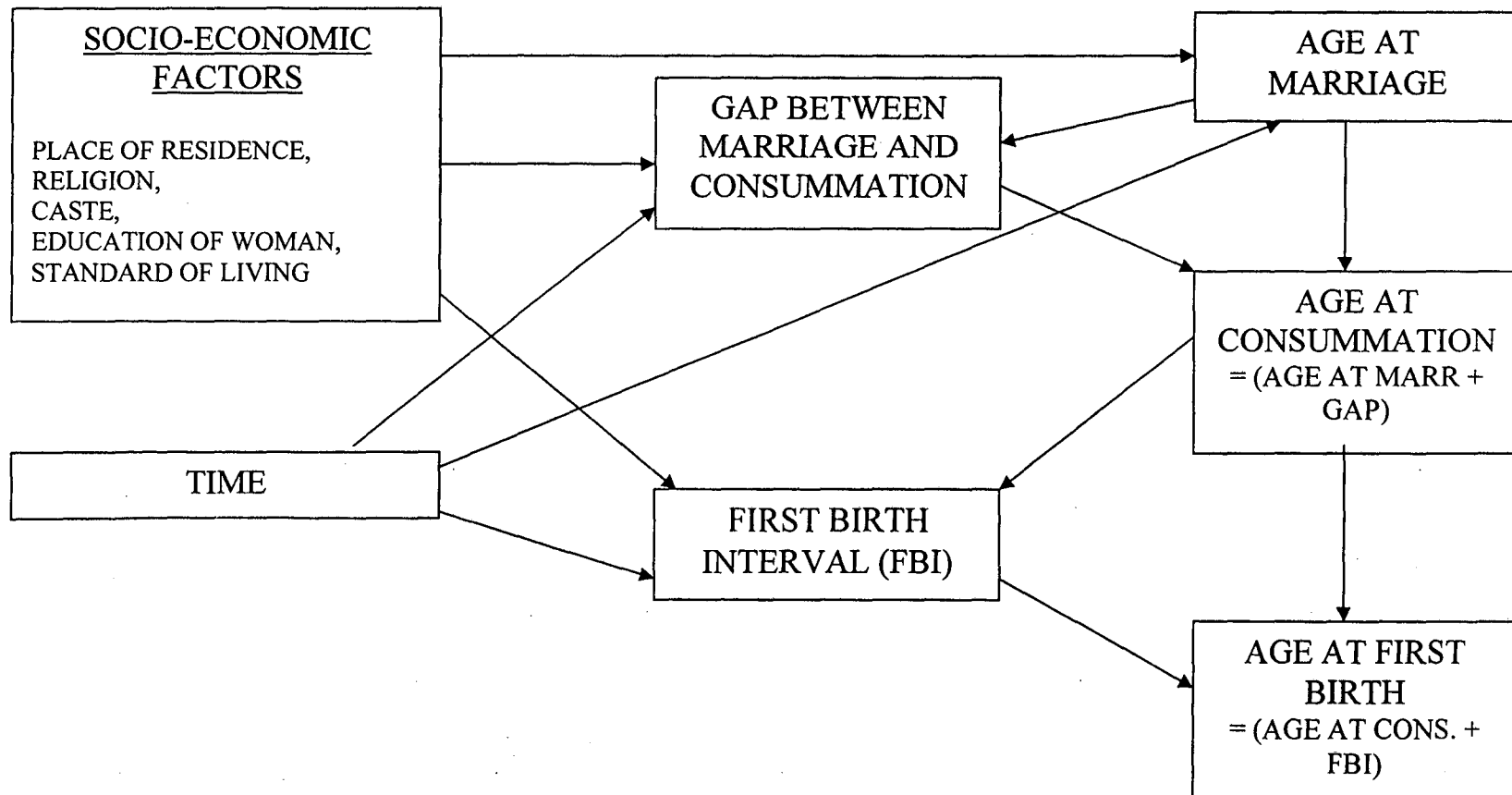
###### **1. Place of Residence**

It is an important factor, which mainly affects the exposure towards the surrounding environments and the society. The place of residence, whether rural or urban, has a great influence on one's life. Norms on age at marriages are likely to differ across the regions and between rural and urban areas. Even when other characteristics do not differ, marriages in urban areas may take place at an age later than in rural areas.

Fig. 3.1

**A TENTATIVE MODEL SHOWING THE INFLUENCES OF SOCIO-ECONOMIC AND TEMPORAL FACTORS ON AGE AT MARRIAGE, CONSUMMATION AND FIRST BIRTH**

(The equalities show identities)



## **2. Religion**

Religion is an important social variable. In India, the major religious groups are Hindus, Muslims, Christians, Sikhs, Buddhists and Jains. Social institution, specially marriage, is strongly influenced by religion because each and every religion has its own customs about marriage. It has been observed that among Hindus marriages are occurring for girls before attaining puberty and there is a gap between marriage and effective marriage, i. e., consummation, but among Muslims and other religious groups such kind of customs are not prevalent. So religion possibly affects woman's age at marriage, age at consummation and age at first birth and hence fertility and maternal and child health as well.

## **3. Caste**

Caste is an important social indicator in Indian society. It has given a prominent social stratification along with predominant social status. It has been observed that cultural practices and social norms are different for some castes from other castes in the society in the same region. Clearly identifiable caste groups in India are: Scheduled Castes, Scheduled Tribes, Other Backward Castes, and Others (forward castes). Norms are likely to differ across these groupings.

## **4. Educational Level of Women**

In recent years, educational level, especially woman's level of education, is an important indicator to measure the level of development in the society. It gives them the power of decision making to achieve autonomy. Education is another factor, which gives more awareness about society, health and also make woman to be financially sound. Woman's age at marriage is strongly affected by level of education because as long as the girl is in the school her risk of getting married is low compared to the girl who is illiterate and staying at home. It is also noticed that age at consummation and first birth are also affected by educational level of woman since awareness of reproductive health for higher educated women is high.

## **5. Household Standard of Living**

The level of standard of living is mainly influenced by the income of the family. A rise in this leads to changes in the life style, which in turn influences age at marriage, age at consummation and age at first birth.

### ***3.1.2 DEMOGRAPHIC FACTORS***

#### **1. Age at First Marriage**

Woman's age at first marriage is an important demographic variable because it denotes the age in the life course after which sexual relations are socially approved, mostly entry into reproductive span and exposes the women to the risk of conception. It has been observed that Child Marriage is still prevalent in India and the age at marriage is very low for the woman, even lower than the minimum legal age at marriage. If a marriage takes place at a very early age, prior to puberty, consummation would be preferred at a later age. A low age at marriage may imply a long gap between marriage and consummation.

#### **2. Age at Consummation**

Within marriage, consummation actually marks the beginning of the exposure to sexual intercourse. So the age at consummation is an important variable, which is more relevant than the age at formal marriage for the reproduction for woman. There is a gap between marriage and consummation in India due to the prevalence of Child Marriage. But it is also affected by age at marriage, educational level of woman, standard of living and the age of the woman.

#### **3. Age at First Birth**

Marriage and consummation give entry to the reproductive period but actual fertility begins with the first birth. So the age at first birth is an important factor in the fertility of a woman and the beginning of the family building. A number of studies show that younger mother has more complications at the time of the first birth because very young women are not biologically and psychologically prepared for child bearing.

#### **4. Time**

National Family Health Survey (NFHS-2) in 1998-99 was a retrospective survey and from that survey, we can easily visualise and estimate as well as examine the past history of the woman with her background characteristics. It has been observed that older woman has lower age at marriage than the younger woman at the time of survey. Other data also show that age at marriage has risen in India over time. But the composition of women according to the socio-economic and demographic background has also changed over the time. This may bring a change in age at marriage. However, it is also possible that secular time factor may also raise age at marriage by changing norms. It may be the factor, which brings the change rather than the change in the composition of woman in different background characteristics. Use of time, as indicated by the time of birth of women, is a variable that would enable one to separately estimate the time effect and other effects.

### **3.2 HYPOTHESIS**

The following hypothesis are taken to be examined through the present study:

1. Urban women, higher caste of women, women with higher level of education and with high standard of living have higher age at marriage, age at consummation and age at first birth compared with rural women, lower caste of women, women with lower level of education and with low standard of living.
2. Women married at a very early age have wider gap between age at marriage and age at consummation compared to those married at older ages.
3. The gap between marriage and consummation is narrow among the women with higher educational level, with high standard of living, urban women and higher caste of women compared with lower educational level, with low standard of living, rural women and lower caste women.
4. Over time, age at marriage has increased even after controlling the influences of socio-economic factors.

### 3.3 DATA SOURCE

The decennial censuses of India provide data on proportion married by age and age at marriage. These would be used to examine the trends in age at marriage. But census does not give data on age at consummation and age at first birth. Hence, for this analysis, the data have been obtained on woman's age at marriage, age at consummation and first birth from the *National Family Health Survey (NFHS-2)* conducted in 1998-99. International Institute of Population Sciences (IIPS) and ORC-Macro conducted this survey in two phases (phase-1 in 1998 and phase-2 in 1999) (IIPS and ORC-Macro, 2000). The NFHS-2 collected data from a representative sample of 89199 ever married women of age group 15-49 years residing in 91196 households in India. The surveyed area represents 99 percent of population living in India and covered 26 states including Delhi. They have used three types of questionnaires, (1) *Household questionnaire*, (2) *Woman's questionnaire*, and (3) *Village questionnaire*. The household questionnaire provides basic socio-economic and demographic information on households. The woman's questionnaire provides for the ever-married woman of reproductive age (15-49 years) information of the background characteristics, reproduction, quality health care, contraception, antenatal, natal and postnatal care, immunisation and health, fertility preference, status of women, husbands' background and woman's work, knowledge about AIDS and also on anaemia. The village questionnaire provides information on the availability of various facilities in the village, especially health and educational facilities and amenities such as electricity and telephone connections. The NFHS-2 has published descriptive reports for all these aforesaid issues with extensive tabulation and graphs for each states and all India level separately. But NFHS-2 does not provide district level data.

Here, the present study discusses the woman's age at marriage, age at consummation and age at first birth in four north-central states, Bihar, Uttar Pradesh, Rajasthan and Madhya Pradesh. The survey was conducted in different points of time in various states in 1998-99 (Table 3.1).

**Table 3.1**

**Survey periods and Number of respondents in Bihar, Uttar Pradesh, Rajasthan, Madhya Pradesh and India, NFHS-2, 1998-99**

Source: IIPS and ORC Macro, 2000

State	Period of survey	Total No. of respondents (Ever-married women of age group 15-49 years)		
		Urban	Rural	Total
Bihar	December, 1998 - April, 1999	687	6337	7024
Uttar Pradesh	December, 1998- march, 1999	1813	7479	9292
Rajasthan	November, 1998 – February, 1999	1592	5221	6813
Madhya Pradesh	November, 1998 – April, 1999	1829	5112	6941
<b>India</b>	<b>November, 1998 – December, 1999</b>	<b>27862</b>	<b>61337</b>	<b>89199</b>

Beside the published reports, NFHS-2 has made the household, individual and village level data available to the researchers. These form the principal source for the individual level analysis in this study. So the interstate analysis is based on published data as well as computed from the raw data.

### 3.4 METHODOLOGY

The study has been divided into three major parts. Firstly, it assesses the trends in woman's age at marriage, age at consummation, age at first birth. Secondly, analysis at the individual level is carried out to examine differentials in age at marriage, age at consummation, age at first birth by selected socio-economic and demographic factors. Lastly, it studies with the help of regression analysis whether the rise in age at marriage is due to the change in socio-economic factors or is a purely temporal effect.

To show the trend in marriage, the most commonly used technique is the Singulate Mean Age at Marriage (SMAM), propounded by J. Hajnal and calculated from the age specific proportion single (Hajnal, 1953). Decennial censuses and NFHS-1 and NFSH-2 have



calculated SMAM, which has been discussed briefly to show the trend over the period of time.

The trends in woman's age at marriage, consummation and first birth will be examined by computing proportion ever married from household file and woman's file from NFHS-2 data. A question has been asked to the ever-married woman of age group 15-49 years on their age at first marriage as *How old were you at the time of your first marriage?* (Q No.111). If the respondent has more than one marriage, therefore, another question has been asked about the start of current marriage as *How old are you at the time of your current marriage?* (Q No. 114). In order to ascertain the age at consummation, the question *How old were you when you started living with your first husband?* (Q. No.112) was asked.

It is more appropriate to calculate the first birth interval as it has relevance for health of the mother and the infants. NFHS-2 has asked questions to mother about all births she had along with date of all those births (Q No. 215). Date of birth of the respondent has also been collected (Q no. 105). Individual data has been given in woman's file and variables created on various aspects are available for the researchers. The woman's *Age at first marriage (s111)* if there are more than one marriage, *Age at current marriage (v114)* if there is only one marriage, *Year of first marriage (v508)*, *Age of respondent at first birth (v212)*, *Date of first birth (v211)* in Century Month Code (CMC) and *Date of first marriage (v501)* also in CMC. Apart from these a computed value has been given as *Marriage to first birth, that is the First birth interval (v221)*.

It is observed from the data that *the first birth interval (v221)*, shows that a large number of women have given birth to the first child within seven months of marriage. In India, conception without wedlock is not socially acceptable and also not practiced. So, it is surprising that a large number of women have birth of a child even within four months of their marriage (Table 3.2); Karnataka (15.6 percent), Orissa (17.3 percent); Rajasthan (10.0 percent). Percentage of women who have given birth to their first child within

seven months of their marriage is very high; Punjab (28.4 percent), Tamil Nadu (28.0 percent), Karnataka (25.6 percent), Bihar (20.0 percent).

**Table 3.2**  
**Percentage of Women Whose First Birth is within Seven Months of Marriage\* by States, India, NFHS-2, 1998-99**

States	Within one month	Within four months	Within six months	Within seven months	Total number of women
Andhra Pradesh	2.1	10.6	16.1	18.2	3201
Assam	3.0	16.2	22.7	26.2	3066
<b>Bihar</b>	<b>3.0</b>	<b>12.7</b>	<b>17.8</b>	<b>20.0</b>	<b>6125</b>
Gujarat	2.1	12.1	17.7	20.5	3443
Haryana	1.9	11.1	17.2	20.2	2687
Himachal Pradesh	1.8	13.8	20.8	24.8	2777
Jammu and Kashmir	2.4	16.2	22.7	25.6	2550
Karnataka	2.8	15.6	22.3	25.6	3925
Kerala	2.1	14.0	22.5	26.4	2592
<b>Madhya Pradesh</b>	<b>2.6</b>	<b>11.4</b>	<b>16.1</b>	<b>18.5</b>	<b>6124</b>
Maharashtra	2.2	12.0	18.1	20.9	4810
Orissa	3.8	17.3	23.4	26.5	3945
Punjab	2.6	16.5	24.8	28.4	2569
<b>Rajasthan</b>	<b>2.2</b>	<b>10.0</b>	<b>13.7</b>	<b>15.8</b>	<b>6035</b>
Tamil Nadu	3.7	17.3	24.4	28.0	4186
<b>Uttar Pradesh</b>	<b>2.5</b>	<b>11.2</b>	<b>15.3</b>	<b>17.6</b>	<b>8174</b>
West Bengal	2.2	13.9	19.5	19.5	3927
<b>India</b>	<b>2.8</b>	<b>13.9</b>	<b>19.8</b>	<b>22.8</b>	<b>80872</b>

**Note:** \* Only those who had have at least one birth

**Source:** Computed from National Family Health Survey (NFHS-2), 1998-99 data files

Because the age of the women at the time of her marriage has been taken in completed years it was difficult to calculate first birth interval from the data set. The distortions seen above are presumably due to this factor, that rounding off of age has not been able to provide an accurate date of marriage and hence an accurate first birth interval. Clearly, the data on first birth interval as such cannot be used. Therefore, this study has focused on the age of the women at the time of her first birth as such and not on the first birth interval.

Similarly, the gap between formal marriage and consummation, a very important variable, could not be used in the analysis. This is because both the ages at formal marriage and age at consummation are recorded in completed years and (not in month or CMC codes) making it difficult to compute the gap with useful precision.

To show the trends in woman's age at marriage and consummation from data, it was necessary to calculate the proportion of ever-married in the different age groups. In order to obtain trends in proportion ever married by age, it is necessary to have data on all women, ever married and never married. The NFHS-2 obtains information on the age at first marriage of ever married women. The household files of sample household provide data on all persons. These could in principle be used to obtain proportion ever married. However, not all of those who are ever married in the selected households could be interviewed. Thus, we have data on ages of all women of sample household and ages of marriage of interviewed women. Therefore, first proportion married by single year of age is obtained from the individual data from the household files. The number of interviewed ever married women by single year of age was divided by respective proportion ever married in that age group. This was used as a denominator to appropriately compute cumulative proportion ever married by single year of age.

For example, in Bihar, 58 (n) ever-married women of age 15 year have been interviewed. But the proportion ever-married in that age group is 0.22 (p). Therefore, the estimated number of women in that age is 264 (N).

$$[N = n/p] = 58/0.22 = 263.6 = 264$$

For each year of age a, cumulative proportion married before exact age a (that is, at ages  $x \leq a$ ) has been computed from this data.

For woman's age at first birth, only those who had at least one birth have been taken into account.

Differentials in woman's median age at marriage, consummation and first birth by selected socio-economic variables have been presented. It has been observed that in these four states, almost 99 percent women were married by the age of 25 years. Thus, non-inclusion of never married women would have little impact on the median if computed only for women of age 25-49 years at survey. Therefore, the median age at marriage, consummation and first birth have been calculated among the unweighted cases of ever-married women of the age group of 25-49 years in respect of different socio-economic backgrounds of the respondents.

To examine the net effect of the socio-economic and demographic (mainly year of birth of the respondent) variables on woman's age at marriage, consummation and first birth, *Multiple Regression Analysis* has been carried out, because there are more than one predictor variables. But here the dependent variables (woman's age at marriage, consummation and first birth), all are continuous variables (quantitative in nature), whereas, the predictor variables are combination of continuous (respondent's year of birth) and categorical variables (place of residence, religion, caste, education level of the women and household standard of living).

These qualitative variables usually indicate the presence or absence of a "quality" or an attribute, such as Hindu or Non Hindu. One method of "quantifying" such attributes is by constructing artificial variables that takes on values of 1 or 0, 0 indicating the absence of an attribute and 1 indicating the presence of that attribute. For example, 0 may indicate that a person is Hindu and 1 may designate a Non Hindu. Variables that assume such 0 and 1 values are called *Dummy Variables*. The category with assigned value 0 is called the *reference category*.

The present analysis deals with categorical variables with two categories as well as more than two categories.

### ***Categorical variables with two categories***

It has been represented by a single dummy variable (see Gujarati, 1995). The variable, rural- urban residence, is an example,

Rural (R): 1 if Rural, 0 otherwise

### ***Categorical variables with more than two categories***

For example, define educational level with four categories: illiterate, primary, secondary and higher. We use three dummy variables to represent these four categories:

P: 1 if primary, 0 otherwise

S: 1 if secondary, 0 otherwise

H: 1 if higher, 0 otherwise

Then the four categories of educational level are represented as

Primary (P): P=1, S=0, H=0

Secondary (S): S=1, P=0, H=0

Higher (H): H=1, P=0, S=0

Illiterate (I): P=0, S=0, H=0

The category for which all the dummies are Zero, which in this case is the illiterate, is the reference category (see Retherford and Cho, 1993).

To analyse the gap between marriage and consummation, and consummation and first birth two regression Models have adopted. In model 2, age at marriage has been taken as an explanatory variable to assess the gap between marriage and consummation where age at consummation was taken as a dependent variable. Similarly, to examine the gap between consummation and first birth, in Model 2, age at consummation has been taken as an explanatory variable.

## **3.4.1 MEASUREMENT OF THE VARIABLES**

### ***DEPENDENT VARIABLES***

In National Family Health Survey-2, 1998-99, a question has been asked on the woman's age at marriage to the ever married women of age group 15-49 years in completed years.

The age at consummation and the age at first birth are also collected in completed years. Therefore, dependent variables are:

**Woman's age at marriage** (in completed years)

(s111 for woman's age at first marriage if the woman has more than one marriage or s114 for woman's age at current marriage if there is only one marriage)

**Woman's age at consummation** (in completed years)

(s112c from NFHS-2 data files)

**Woman's age at first birth\*** (in completed years)

(v212 from NFHS-2 data files)

\* only those who have had at least one birth

#### ***INDEPENDENT VARIABLES***

In the present study, many variables are qualitative (categorical). To fit them in a regression model dummy variables were used.

#### **Place of residence**

(v025 from NFHS-2 data files)

R = 1 if rural, = 0 otherwise

*Reference category = Urban*

#### **Religion**

(v130 from NFHS-2 data files)

H = 1 if Hindu, = 0 otherwise

*Reference category = Non Hindu*

**Caste**

(v131 from NFHS-2 data files)

SC = 1 if Scheduled Castes, = 0 otherwise

ST = 1 if Scheduled Tribe, = 0 otherwise

OBC = 1 if Other Backward Castes, = 0 otherwise

*Reference category= Others (non SC/ST/OBC)*

**Educational level**

(v106 from NFHS-2 data files)

P = 1 if Primary, = 0 otherwise

S = 1 if Secondary, = 0 otherwise

H = 1 if Higher, = 0 otherwise

*Reference category= Illiterate*

**Household standard of living**

(ssli from NFHS-2 data files)

M = 1 if Medium, = 0 otherwise

H = 1 if High, = 0 otherwise

*Reference category = Low*

\* (as computed by the NFHS-2 on the basis of possession of assets, housing etc., see page 40, All India Report, NFHS-2)

**Time**

(v010 From NFHS-2 data files)

Continuous variable, as calendar year of birth of the woman

= xx if the year is 19xx (e.g., =72 if 1972)

**Woman's age at marriage**

(s111 for woman's age at first marriage if the woman has more than one marriage or s114 for woman's age at current marriage if there is only one marriage) is a variable used as an explanatory variable for age at consummation in Model 2

**Woman's age at consummation**

(s112c from NFHS-2 data files)

It is a variable used as an explanatory variable for age at first birth in Model 2.

**3.5 SCOPE AND LIMITATION OF DATA**

National Family Health Survey-2, 1998-99, provides information on different issues on woman's fertility and health. In the present study, focus has been concentrated only on woman's age at marriage, consummation and the first birth. Due to unavailability of proper data, the first birth interval could not be calculated. The main limitation of the study is that it has to concentrate only on the ever-married women because data is available vividly on them. But data on some important aspects like, working status of the women before marriage, use of contraception at the time of first birth, husbands characteristics, standard of living before marriage were not collected, which restricts the further detailed analysis on the topic. Therefore, it assumes that the standard of living of present household is not different from the natal home of the respondent because isogamies are common in India. Similarly, place of residence before marriage also is assumed to be the same at the present, rural to rural and urban to urban migration of females due to marriage are usual but rural to urban or urban to rural migration are not common.



## *Chapter 4*

*Trends in Woman's Age at Marriage,  
Consummation, and First Birth in four North-  
central States in India*

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## CHAPTER 4

### TRENDS IN WOMAN'S AGE AT MARRIAGE, CONSUMMATION AND FIRST BIRTH IN BIHAR, UTTAR PRADESH, RAJASTHAN AND MADHYA PRADESH

Trends in woman's age at marriage, age at consummation and age at first birth have been discussed in the present section of the study. To analyse the trends ever married and never-married women are taken into account and the proportions never married by specific ages, in single years, in these states are computed. The study is mainly focused on the proportion of women of age group 15-49 years married/ consummated marriage/ had their first birth by the exact age. The survey is retrospective in nature; therefore, the past trend can be calculated from the current age of the women and age at marriage for those married before the survey date.

#### *4.1.1 TRENDS IN SINGULATE MEAN AGE AT MARRIAGE (ACCORDING TO CENSUS OF INDIA, 1961-1991) IN INDIA*

Census of India also collects information marital status by current age. Singulate Mean Age at Marriage (SMAM) has been computed from there according to the *Hajnal Method* (Hajnal, 1953). The SMAMs have been computed by the census organization and demographers and are presented in the NFHS reports (IIPS, 1995; IIPS and ORC Macro, 2000).

The trends show that there is an increase of more than three years in SMAM within the last three decades, 1961 to 1991 in India. Whereas, in 1961, the mean was 15.9 years, the mean rose to 19.3 years in 1991. However, the Singulate Mean Age at Marriage is still very low in India (Table 4.1). It is always below the national average in the four states of the study area (Bihar, Uttar Pradesh, Rajasthan and Madhya Pradesh) along with Andhra Pradesh. In 1961, the lowest SMAM was observed in Madhya Pradesh (13.9 years) and the state continued at that rank in 1971 also (15.0 years). But in 1981 and 1991, Rajasthan has the

lowest SMAM, 16.1 years and 17.5 years respectively. Bihar also joins Rajasthan for the lowest SMAM in 1991. On the other hand, the increase in SMAM is very low over the period in Kerala in compared to other states in the country. However, the higher literacy rate, social and economic development in

**Table 4.1**  
**Female Singulate Mean Age at Marriage by States, India, 1961-1998/99**

State	Census				NFHS-1*	NFHS-2**
	1961*	1971**	1981**	1991**	1992-93	1998-99
Andhra Pradesh	15.2	16.3	17.3	18.3	18.1	18.3
Assam	18.6	18.7	N.A	N.A	21.6	21.7
<b>Bihar</b>	<b>14.3</b>	<b>15.3</b>	<b>16.6</b>	<b>17.5</b>	<b>18.0</b>	<b>18.8</b>
Gujarat	17.1	18.5	19.6	19.9	20.2	20.2
Haryana	N.A	17.7	17.9	18.8	18.4	19.8
Himachal Pradesh	15.6	17.7	19.2	20.3	20.4	22.1
Jammu & Kashmir	N.A	N.A	N.A	N.A	21.2	22.5
Karnataka	16.4	17.9	19.3	20.1	19.6	20.1
Kerala	20.2	21.3	22.1	22.2	22.1	21.5
<b>Madhya Pradesh</b>	<b>13.9</b>	<b>15.0</b>	<b>16.6</b>	<b>17.8</b>	<b>17.4</b>	<b>18.9</b>
Maharashtra	15.8	17.6	18.8	19.7	19.3	19.8
Orissa	16.4	17.3	19.1	20.2	20.7	21.2
Punjab	17.5	20.1	21.1	21.0	21.1	22.1
<b>Rajasthan</b>	<b>14.2</b>	<b>15.1</b>	<b>16.1</b>	<b>17.5</b>	<b>18.4</b>	<b>18.3</b>
Tamil Nadu	18.4	19.6	20.3	20.9	20.5	20.9
<b>Uttar Pradesh</b>	<b>14.5</b>	<b>15.5</b>	<b>16.7</b>	<b>18.0</b>	<b>18.6</b>	<b>19.0</b>
West Bengal	15.9	18.0	19.3	19.7	19.2	19.6
<b>India</b>	<b>15.9</b>	<b>17.2</b>	<b>18.4</b>	<b>19.3</b>	<b>20.0</b>	<b>19.7</b>

Source: \* IIPS, 1995

\*\* IIPS and ORC-Macro, 2000

Kerala has had a higher age at marriage, but after reaching the fourth stage of demographic transition, there is stagnation and further increase in age at marriage is difficult. In the north-central states in India, lower age at marriage is mostly due to the lower rate of literacy and development. It may suggest the picture of north-south divide

on age at marriage. But Punjab, Haryana, Himachal Pradesh, Gujarat, West Bengal also have a relatively higher age at marriage, which indicates that geographical location is not the main factor. Rather it is the socio-economic development, mainly the society, which pushes up the age at marriage. With the contrast in the pattern, Orissa has higher SMAM compared to India from 1961 to 1991, in spite of a lower level of development; therefore, it is necessary to examine the differentials in age at marriage more carefully.

#### ***4.1.2 TRENDS IN SINGULATE MEAN AGE AT MARRIAGE (ACCORDING TO NFHS-1 AND NFHS-2) IN INDIA***

National Family Health Survey (1992-93 and 1998-99) also computed Singulate Mean Age at Marriage (SMAM) for ever-married women in India. The two surveys give fairly close estimates for India, and also for most of the states (Table 4.1). The small differences (actually a small decline from 20.0 to 19.7 years for India) need not be considered as real rise or decline, but probably sampling fluctuations. The NFHS estimates also show woman's mean age at marriage is low in north-central states in India, mainly in Bihar, Uttar Pradesh, Rajasthan and Madhya Pradesh. It was the lowest in Madhya Pradesh (17.4 years) at the time of NFHS-1 and Rajasthan (18.3 years) in NFHS-2, whereas, national average was 20.0 years and 19.7 years in NFHS-1 and NFHS-2 respectively. Jammu and Kashmir has the highest SMAM for the females in NFHS-2 (22.5 years) and Kerala in NFHS-1 (22.1 years). It shows higher age for all the southern states except Andhra Pradesh, where it is lower than the national average in both the surveys. Child marriage is still prevailing in some north-central states in India, though the singulate mean age at marriage has crossed the minimum legal age at marriage for women in these states.

#### ***4.2 TRENDS IN WOMAN'S AGE AT MARRIAGE IN FOUR NORTH-CENTRAL STATES IN INDIA (ACCORDING TO NFHS-2, 1998-99)***

The National Family Health Survey (NFHS-2) in 1998-99 shows by the age of 30 years only 0.2 percent of women were not married in Bihar, which is the second lowest level

among the seventeen major states in India. Rajasthan (0.1) has the lowest never married at the age of 30 years onwards for females. Uttar Pradesh (0.5) and Madhya Pradesh (1.0) also have very low proportion of never married by the age of 30 years (IIPS and ORC Macro, 2000).

Table 4.2

**Woman's Age at Marriage in Bihar**  
(Cumulative proportion of women married before exact age)

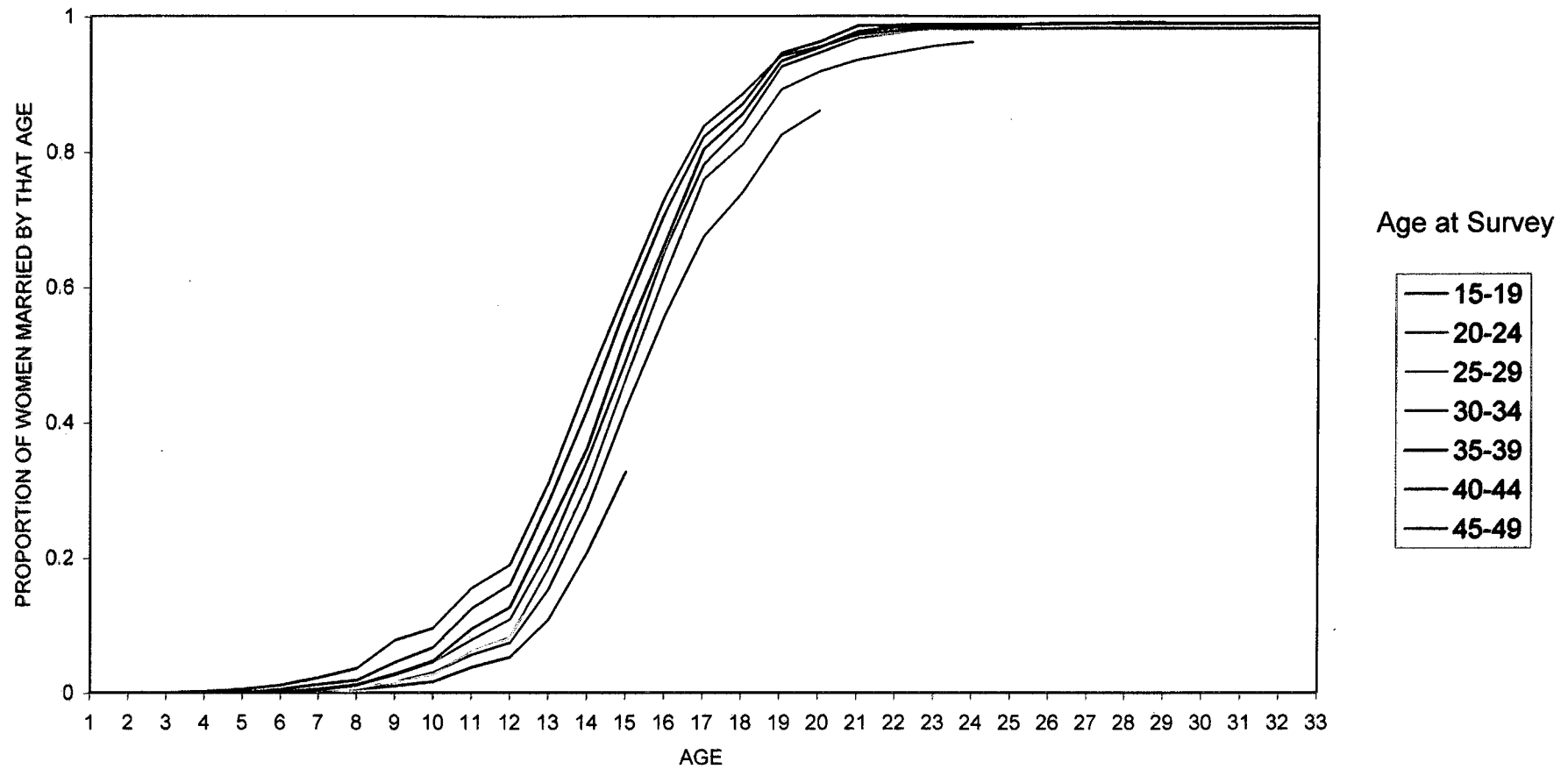
Age	Age of Women at Survey						
	15-19	20-24	25-29	30-34	35-39	40-44	45-49
6	0.00	0.00	0.00	0.00	0.00	0.01	0.01
7	0.00	0.00	0.00	0.00	0.01	0.01	0.02
8	0.01	0.00	0.01	0.01	0.01	0.02	0.04
9	0.01	0.02	0.02	0.03	0.03	0.04	0.08
10	0.02	0.03	0.03	0.05	0.05	0.07	0.10
11	0.04	0.06	0.06	0.08	0.09	0.12	0.16
12	0.05	0.07	0.08	0.11	0.13	0.16	0.19
13	0.11	0.15	0.19	0.21	0.24	0.28	0.31
14	0.21	0.27	0.31	0.35	0.36	0.42	0.46
15	0.33	0.42	0.47	0.49	0.53	0.57	0.60
16		0.56	0.62	0.65	0.66	0.71	0.73
17		0.67	0.76	0.78	0.80	0.82	0.84
18		0.74	0.81	0.84	0.86	0.87	0.89
19		0.82	0.89	0.93	0.93	0.95	0.94
20		0.86	0.92	0.95	0.95	0.96	0.95
21			0.94	0.97	0.98	0.99	0.97
22			0.95	0.97	0.98	0.99	0.98
23			0.96	0.98	0.99	0.99	0.98
24			0.96	0.99	0.99	0.99	0.98
25				0.99	0.99	0.99	0.98
26				0.99	0.99	0.99	0.98
27				0.99	0.99	0.99	0.98
28				0.99	0.99	0.99	0.98
29				0.99	0.99	0.99	0.98
30					0.99	0.99	0.98
31					0.99	0.99	0.98
32					0.99	0.99	0.98
33					0.99	0.99	0.98
<b>Median age at marriage<sup>s</sup></b>	<b>N.C</b>	<b>15.57</b>	<b>15.20</b>	<b>15.06</b>	<b>14.82</b>	<b>14.53</b>	<b>14.28</b>
<b>No. of Ever-married Women</b>	<b>829</b>	<b>1419</b>	<b>1415</b>	<b>1082</b>	<b>920</b>	<b>761</b>	<b>597</b>
<b>Proportion married</b>	<b>0.46</b>	<b>0.89</b>	<b>0.98</b>	<b>0.99</b>	<b>0.99</b>	<b>1.00</b>	<b>1.00</b>
<b>Estimated No. of women in the age group including never married wo</b>	<b>1802</b>	<b>1594</b>	<b>1444</b>	<b>1093</b>	<b>929</b>	<b>761</b>	<b>597</b>

Note: N.C= Not Calculated because less than 50 percent of women have married for the first time by that age 20

<sup>s</sup> Include both ever married and never married women

Source: Computed from NFHS-2 data files

**Figure 4.1**  
**WOMAN'S AGE AT MARRIAGE IN BIHAR**



Source: Computed from NFHS-2 data files

A detailed assessment of age at marriage among women in Bihar gives us an idea that child marriage is still being followed commonly. Among women who are 15-19 years old at the time of the survey, proportion married by the age 13 years was 0.11 and of those, 20-24 years, 0.74 proportion were married before reaching the minimum legal age at marriage, i.e., 18 years (Table 4.2). The data shows only a small decline in the proportion married by the age below 18 years within the last 25 years in Bihar. Women who were aged 45-49 years at the time of survey show a higher proportion (0.89) married by the age. A shift has been observed among the women who got married before attaining their 16<sup>th</sup> birthday in last 30 years (Fig. 4.1). There is a declining trend in the proportion married among women in the younger age group below 15 years of age at marriage. It shows proportion married by 15 years among the women of age group of 45-49 years (0.60) at the time of survey, which is nearly double the proportion (0.33) for the younger cohort, women who were aged between 15-19 at the time of the survey. It also depicts that women are generally married by 22 years of age in Bihar and the trend remained almost the same over the past 30 years.

These data reveals that there is still prevalence of child marriage in Uttar Pradesh. By the age of 26 years, 98 percent women are married and the trend remains the same over the past thirty years. By the age of 17 years, more than 50 percent are married and surprisingly this trend is constant over the year in the state (Table 4.3). But there is an increase in proportion never married at very younger age, therefore, only 0.27 women in age group of 15-19 years are married by their 15<sup>th</sup> birthday compared to 0.75 proportion of women of the older cohort, who were married by that age. There is a sharp decline in proportion married at very younger age, whereas, only 0.04 are married by age 11 years in age group 15-19 years compared to 0.22 who were married by that age of the age group 45-49 years (Fig. 4.2). There is an increase in median age at marriage over the years but still it is below the minimum legal age at marriage.

**Table 4.3**  
**Woman's Age at Marriage in Uttar Pradesh**  
(Cumulative proportion of women married before the exact age)

Age	Age of Women at Survey						
	15-19	20-24	25-29	30-34	35-39	40-44	45-49
4	0.00	0.00	0.00	0.00	0.01	0.01	0.00
5	0.00	0.00	0.01	0.01	0.01	0.01	0.00
6	0.01	0.01	0.02	0.02	0.03	0.03	0.04
7	0.01	0.02	0.03	0.04	0.04	0.04	0.05
8	0.01	0.03	0.03	0.05	0.07	0.06	0.09
9	0.02	0.04	0.05	0.08	0.09	0.10	0.12
10	0.02	0.06	0.07	0.10	0.11	0.13	0.15
11	0.04	0.09	0.11	0.14	0.16	0.20	0.22
12	0.05	0.12	0.14	0.18	0.21	0.26	0.29
13	0.07	0.16	0.21	0.25	0.30	0.33	0.36
14	0.14	0.26	0.31	0.36	0.39	0.43	0.46
15	0.19	0.36	0.43	0.48	0.52	0.54	0.59
16	0.27	0.49	0.58	0.61	0.66	0.68	0.75
17		0.57	0.68	0.72	0.75	0.79	0.81
18		0.63	0.75	0.78	0.81	0.85	0.87
19		0.74	0.84	0.87	0.88	0.93	0.93
20		0.78	0.88	0.89	0.90	0.94	0.95
21		0.82	0.91	0.92	0.93	0.97	0.97
22			0.93	0.94	0.95	0.97	0.98
23			0.95	0.96	0.96	0.98	0.98
24			0.96	0.97	0.97	0.98	0.98
25			0.97	0.97	0.97	0.99	0.99
26			0.98	0.98	0.98	0.99	0.99
27				0.98	0.98	0.99	0.99
28				0.98	0.98	0.99	0.99
29				0.98	0.99	0.99	1.00
30				0.99	0.99	0.99	1.00
31				0.99	0.99	0.99	1.00
32					0.99	0.99	1.00
33					0.99	1.00	1.00
34					0.99	1.00	1.00
35					0.99	1.00	1.00
36					0.99	1.00	1.00
37						1.00	1.00
38						1.00	1.00
39						1.00	1.00
<b>Median age at marriage<sup>5</sup></b>	N.C	16.12	15.46	15.15	14.84	14.63	14.30
No. of Ever-married Women	1082	1814	1763	1521	1302	1041	764
Proportion married	0.38	0.86	0.97	0.99	0.99	1.00	1.00
Estimated No. of women in the age group including never married women	2847	2109	1818	1536	1315	1041	764

Note: N.C = Not Calculated because less than 50 percent of women have married for the first time by age 20

<sup>5</sup> Include both ever married and never married women

Source: Computed from NFHS-2 data files



**Table 4.4**  
**Woman's Age at Marriage in Rajasthan**  
**(Cumulative proportion of women married before exact age)**

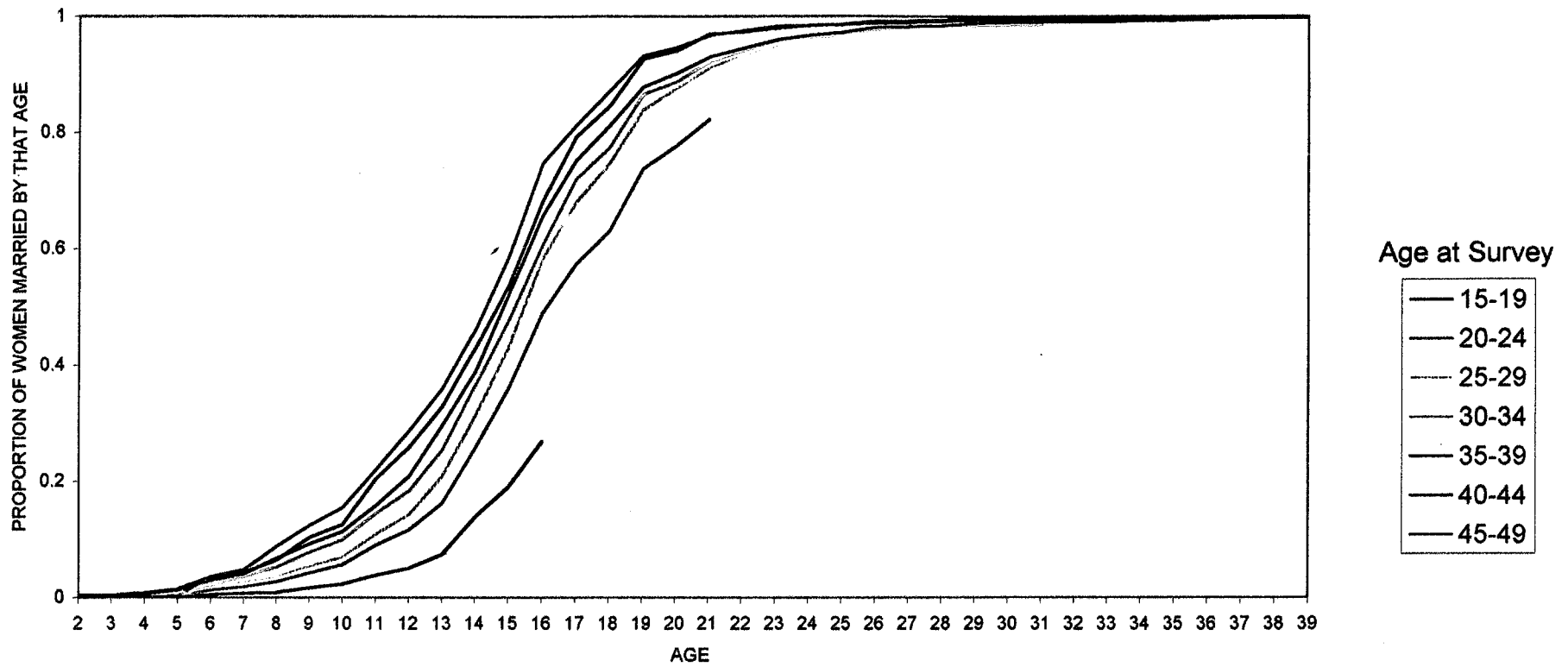
Age	Age of Women at survey						
	15-19	20-24	25-29	30-34	35-39	40-44	45-49
2	0.01	0.00	0.01	0.01	0.00	0.01	0.00
3	0.01	0.01	0.02	0.01	0.01	0.01	0.02
4	0.01	0.02	0.02	0.02	0.02	0.02	0.02
5	0.02	0.02	0.03	0.03	0.02	0.02	0.03
6	0.02	0.04	0.05	0.05	0.04	0.03	0.04
7	0.03	0.05	0.06	0.06	0.05	0.05	0.05
8	0.05	0.07	0.09	0.09	0.07	0.07	0.08
9	0.06	0.08	0.10	0.10	0.09	0.08	0.09
10	0.07	0.09	0.13	0.11	0.10	0.10	0.10
11	0.09	0.16	0.19	0.17	0.17	0.18	0.18
12	0.10	0.18	0.23	0.20	0.21	0.20	0.21
13	0.15	0.24	0.28	0.28	0.29	0.25	0.29
14	0.19	0.30	0.38	0.36	0.40	0.36	0.35
15	0.25	0.38	0.44	0.46	0.49	0.45	0.46
16		0.53	0.60	0.66	0.65	0.64	0.68
17		0.64	0.70	0.75	0.76	0.76	0.80
18		0.71	0.77	0.81	0.82	0.83	0.84
19		0.80	0.84	0.88	0.90	0.92	0.91
20		0.84	0.87	0.90	0.93	0.94	0.94
21			0.92	0.94	0.96	0.97	0.98
22			0.93	0.96	0.97	0.98	0.98
23			0.95	0.97	0.98	0.99	0.99
24			0.97	0.98	0.99	0.99	0.99
25				0.99	0.99	0.99	0.99
26				0.99	0.99	1.00	0.99
27				1.00	1.00	1.00	0.99
28				1.00	1.00	1.00	0.99
29				1.00	1.00	1.00	0.99
31					1.00	1.00	0.99
32					1.00	1.00	0.99
33					1.00	1.00	1.00
34					1.00	1.00	1.00
35						1.00	1.00
<b>Median age at marriage<sup>5</sup></b>	<b>N.C</b>	<b>15.80</b>	<b>15.37</b>	<b>15.20</b>	<b>15.06</b>	<b>15.26</b>	<b>15.18</b>
<b>No. of Ever-married Women</b>	<b>605</b>	<b>1361</b>	<b>1354</b>	<b>1163</b>	<b>1002</b>	<b>691</b>	<b>634</b>
<b>Proportion married</b>	<b>0.49</b>	<b>0.90</b>	<b>0.98</b>	<b>0.99</b>	<b>1.00</b>	<b>1.00</b>	<b>0.99</b>
<b>Estimated No. of women in the age group including never married women</b>	<b>1235</b>	<b>1512</b>	<b>1382</b>	<b>1175</b>	<b>1002</b>	<b>691</b>	<b>640</b>

Note: N.C= Not Calculated because less than 50 percent of women have married for the first time by that age 20

<sup>5</sup> Include both ever married and never married women

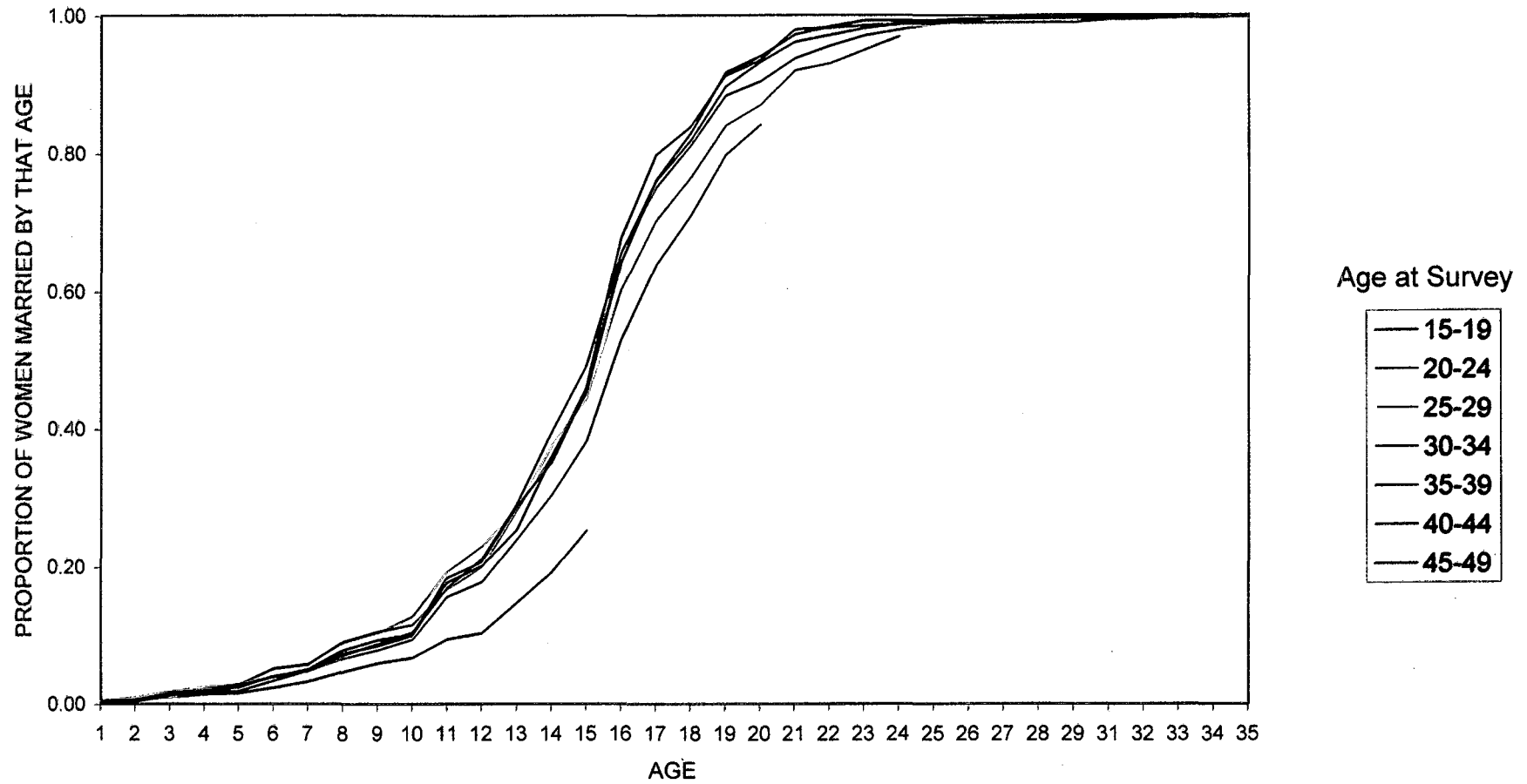
Source: Computed from NFHS-2 data files

**Figure 4.2**  
**WOMAN'S AGE AT MARRIAGE IN UTTAR PRADESH**



Source: Computed from NFHS-2 data files

**Figure 4.3**  
**WOMAN'S AGE AT MARRIAGE IN RAJASTHAN**



Source: Computed from NFHS-2 data files

The trend in age at marriage is different in Rajasthan. Proportion ever married by specified exact ages has not changed much over the period. By the age of 25 years, almost all the women (0.99) are married in the state (Table 4.4). The proportion married by 15 years of age has declined almost half over the last 30 years, i.e., cohorts of age group 45-49 years (0.46) to 15-19 years (0.25). But the scenario remains the same for early marriages, mostly child marriages are still prevailing in the state. Proportion married by the age 10 years (on an average 0.10) has almost remained constant for the last three decades, indicating non-negligible proportion of girls continue to get married very early (child marriage) and the custom of *Gauna* is pursuing till date (Fig 4.3).

Madhya Pradesh also shows the same trend in woman's age at marriage, where almost half (0.50) of the women are married before reaching the age 16 years (Table 4.5). Almost all the women are married by the age at 26 years (0.99). There is a declining trend in the proportion ever married before specified ages but the tempo is not slow and it shows proportion married by age 16 years for women in the age group of 20-24 years (0.51) is lower than the proportion married by that age of the women for age group 45-49 years (0.70) at the time of survey. There is a sharp fall in age at marriage at very younger age, very low proportion of (0.02) women are married by age at 10 years in the age group of 15-19 years compared to women of age 45-49 years (0.13) at the time of survey. Changes have occurred in recent years and mostly after 1978, and the data reveal a sudden decrease in proportion ever married before the age of 13 years from women of the cohort of 25-29 years to younger cohorts (Fig 4.4).

Table 4.5

**Woman's Age at Marriage in Madhya Pradesh**  
(Cumulative proportion of women married before exact age)

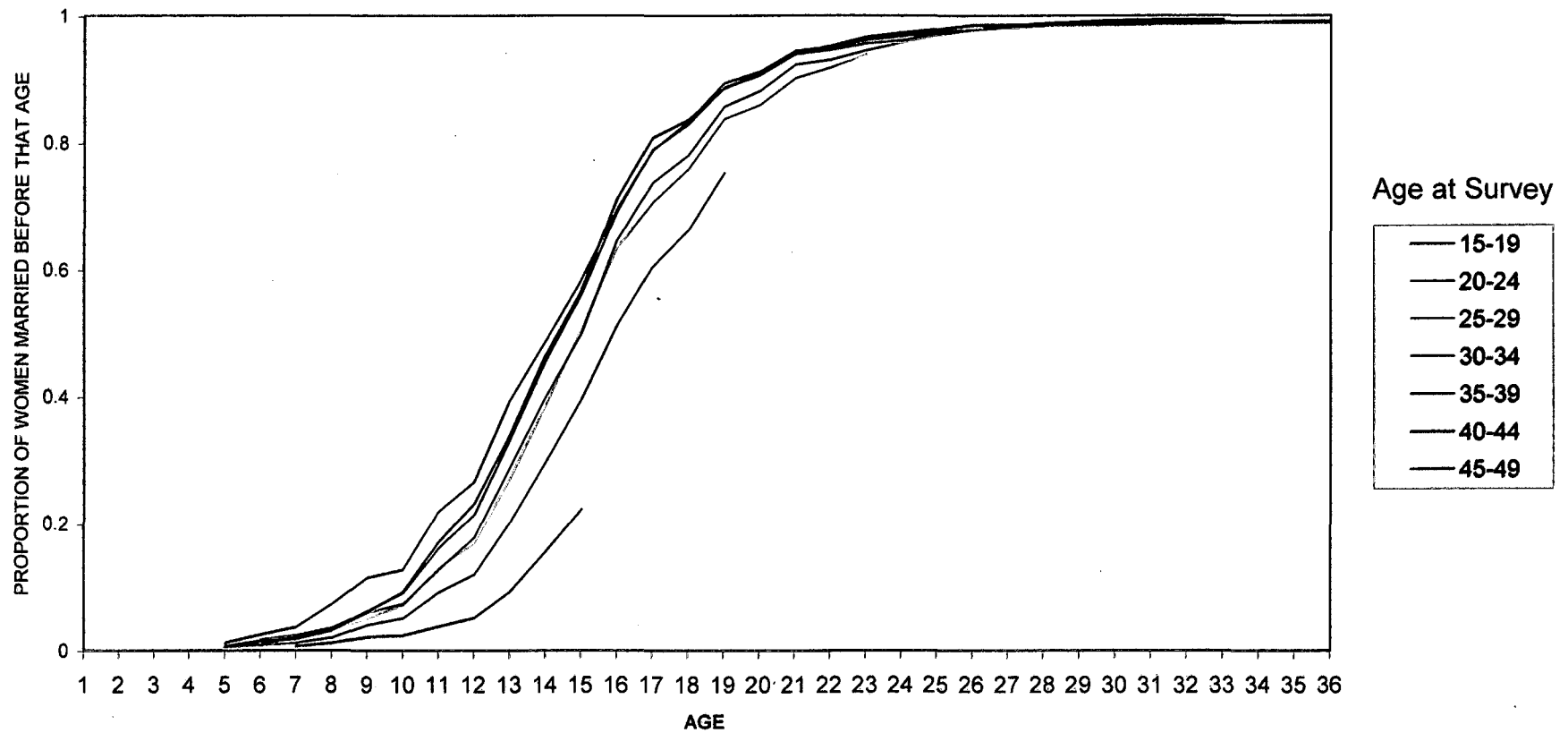
Age	Age of Women at survey						
	15-19	20-24	25-29	30-34	35-39	40-44	45-49
5	0.00	0.00	0.00	0.00	0.01	0.01	0.01
6	0.00	0.01	0.02	0.02	0.01	0.01	0.03
7	0.01	0.01	0.02	0.02	0.02	0.02	0.04
8	0.01	0.02	0.03	0.04	0.03	0.03	0.07
9	0.02	0.04	0.05	0.06	0.06	0.06	0.12
10	0.02	0.05	0.07	0.07	0.09	0.09	0.13
11	0.04	0.09	0.13	0.13	0.16	0.17	0.22
12	0.05	0.12	0.17	0.18	0.21	0.23	0.27
13	0.09	0.20	0.27	0.29	0.33	0.34	0.39
14	0.16	0.30	0.39	0.40	0.46	0.46	0.49
15	0.22	0.40	0.51	0.50	0.56	0.57	0.58
16		0.51	0.64	0.65	0.69	0.71	0.70
17		0.60	0.71	0.74	0.79	0.81	0.79
18		0.66	0.76	0.78	0.83	0.84	0.83
19		0.75	0.84	0.86	0.89	0.89	0.89
20			0.86	0.88	0.91	0.91	0.91
21			0.90	0.92	0.94	0.94	0.94
22			0.92	0.93	0.95	0.95	0.95
23			0.94	0.95	0.96	0.97	0.96
24				0.96	0.96	0.97	0.97
25				0.97	0.97	0.98	0.98
26				0.98	0.98	0.99	0.98
27				0.98	0.98	0.99	0.98
28				0.98	0.99	0.99	0.99
29					0.99	0.99	0.99
30					0.99	0.99	0.99
31					0.99	0.99	0.99
32					0.99	0.99	0.99
33					0.99	0.99	0.99
34						0.99	0.99
35						0.99	0.99
36						0.99	0.99
<b>Median age at marriage<sup>§</sup></b>	<b>N.C</b>	<b>15.90</b>	<b>14.91</b>	<b>15.0</b>	<b>14.40</b>	<b>14.36</b>	<b>14.10</b>
<b>No. of Ever-married Women</b>	<b>896</b>	<b>1290</b>	<b>1367</b>	<b>1173</b>	<b>956</b>	<b>694</b>	<b>553</b>
<b>Proportion married</b>	<b>0.42</b>	<b>0.85</b>	<b>0.96</b>	<b>0.98</b>	<b>0.99</b>	<b>0.99</b>	<b>0.99</b>
<b>Estimated No. of women in the age group including never married women</b>	<b>2133</b>	<b>1517</b>	<b>1423</b>	<b>1196</b>	<b>965</b>	<b>701</b>	<b>558</b>

Note: N.C= Not Calculated because less than 50 percent of women have married for the first time by that age 20

<sup>§</sup> Include both ever married and never married women

Source: Computed from NFHS-2 data files

**Figure 4.4**  
**WOMAN'S AGE AT MARRIAGE IN MADHYA PRADESH**



Source: Computed from NFHS-2 data file

### ***4.3 TRENDS IN WOMAN'S AGE AT CONSUMMATION IN FOUR NORTH-CENTRAL STATES IN INDIA (ACCORDING TO NFHS-2, 1998-99)***

Age at marriage is an important factor in reproductive health but age at consummation is more important than that because actual sexual relations begin only with the consummation. In India, where child marriage is prevalent and there is a gap between age at marriage and age at consummation, often marriage occurs before reaching puberty and consummation takes place after puberty. This gap gives time to develop biologically and psychologically to enter the sexual union. This section of the chapter focuses on the trends in age at consummation in the last three decades in Bihar, Uttar Pradesh, Rajasthan and Madhya Pradesh. It has been observed that in India, woman's age at puberty is around 12 years, but it varies across individuals and depends on the genetic as well as the nutritional condition of the girl. National Family Health Survey assumed that none of the respondent has started cohabiting before reaching her 12<sup>th</sup> birthday; therefore, it has taken this as a cut off point. However, the proportion, who consummated marriage before age 13 is small (between 0.02 to 0.10) in these four states for all the cohorts of age 15- 49 years at survey.

In Bihar, where age at marriage is low, half of the women are married by the age at 16 years and also have consummation by the age of 17 years. Most surprisingly, there is no major shift in this proportion over the last three decades (Fig 4.5). It shows that almost the same proportion of women of age group 20-24 years (0.49) had consummated marriage before 17 years of age as the women of the older age groups, 45-49 years (0.58). The data reveal that almost all the women have consummated by the age of 25 years (Table 4.6), as the age at consummation is low in the state. There is a gradual decline in the proportion who had consummation by the age at 15 years from the older cohort, 45-49 years (0.29) to the younger, 15-19 years (0.14) over time. But still the situation is not quite favourable to the women in terms of reproductive health, mainly for the mother and the infant, because a non-negligible proportion of marriages are consummated at a very early age.

**Table 4.6**  
**Woman's Age at Consummation in Bihar**  
(Cumulative proportion of women consummated marriage before the exact age)

Age	Age of Women at survey						
	15-19	20-24	25-29	30-34	35-39	40-44	45-49
13	0.02	0.03	0.03	0.03	0.04	0.04	0.05
14	0.06	0.09	0.11	0.14	0.12	0.13	0.16
15	0.14	0.21	0.24	0.24	0.27	0.26	0.29
16		0.35	0.38	0.39	0.41	0.44	0.42
17		0.49	0.56	0.57	0.59	0.60	0.58
18		0.61	0.67	0.70	0.71	0.72	0.72
19		0.73	0.79	0.83	0.83	0.84	0.83
20		0.80	0.86	0.88	0.88	0.91	0.90
21			0.90	0.93	0.93	0.96	0.95
22			0.93	0.96	0.96	0.99	0.96
23			0.95	0.97	0.98	0.99	0.99
24			0.96	0.98	0.99	0.99	0.99
25			0.97	0.98	0.99	0.99	0.99
26				0.98	1.00	1.00	1.00
27				0.99	1.00	1.00	1.00
28				0.99	1.00	1.00	1.00
29				0.99	1.00	1.00	1.00
30				0.99	1.00	1.00	1.00
31					1.00	1.00	1.00
32					1.00	1.00	1.00
33					1.00	1.00	1.00
<b>Median age at consummation<sup>s</sup></b>	<b>N.C</b>	<b>16.08</b>	<b>15.66</b>	<b>15.61</b>	<b>15.50</b>	<b>15.37</b>	<b>15.50</b>
<b>No. of Ever-married Women</b>	<b>829</b>	<b>1419</b>	<b>1415</b>	<b>1082</b>	<b>921</b>	<b>761</b>	<b>597</b>
<b>Proportion married</b>	<b>0.46</b>	<b>0.89</b>	<b>0.98</b>	<b>0.99</b>	<b>0.99</b>	<b>1.00</b>	<b>1.00</b>
<b>Estimated No. of women in the age group including never married women</b>	<b>1802</b>	<b>1594</b>	<b>1444</b>	<b>1093</b>	<b>930</b>	<b>761</b>	<b>597</b>

Note: N.C= Not calculated because less than 50 percent women have consummated marriage by age 20

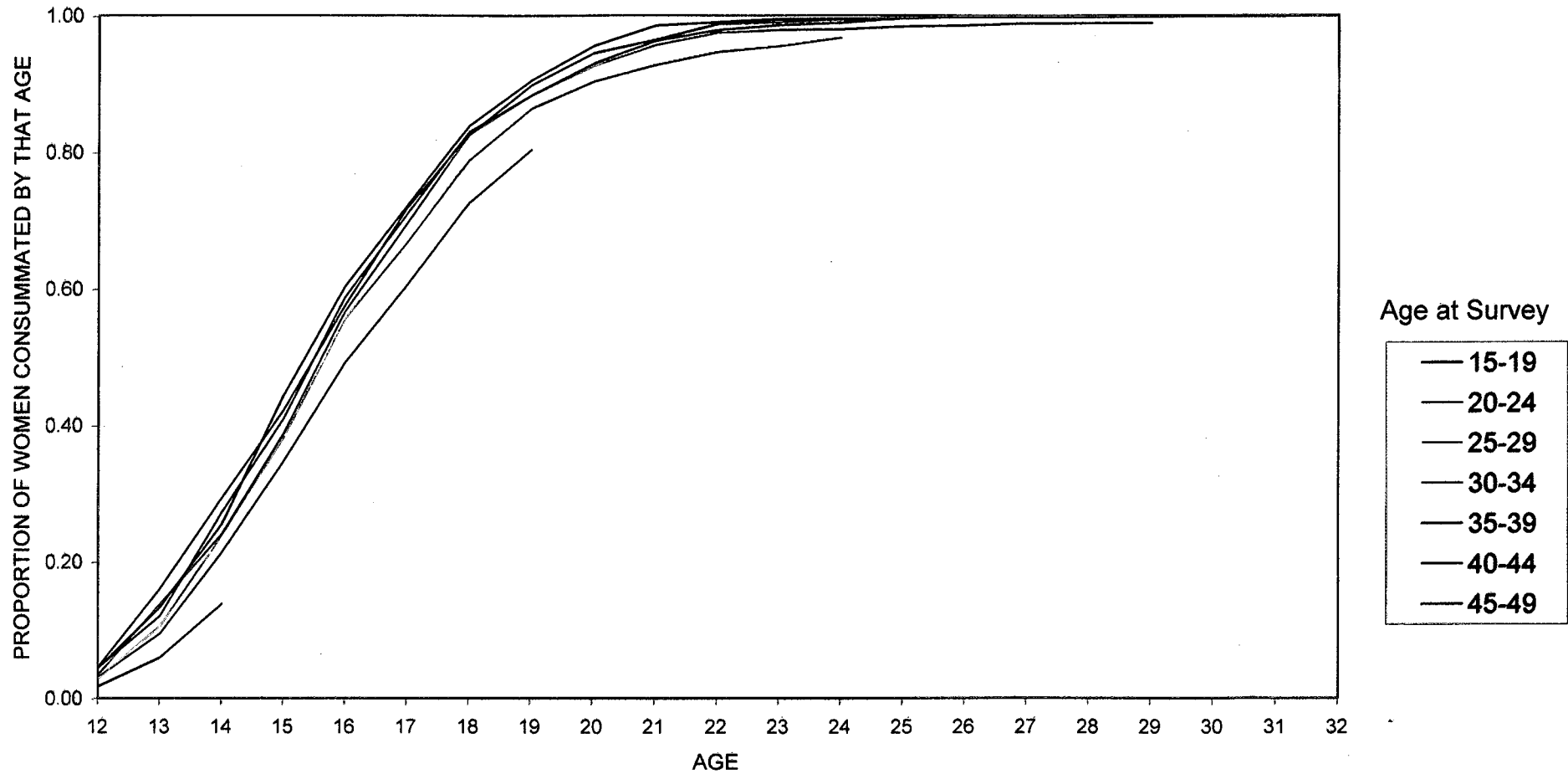
<sup>s</sup> Include both ever married and never married women

Source: Computed from NFHS-2 data files

The condition is similar in the neighbouring state of Uttar Pradesh. Along with the low at age at marriage, girls are entering the effective marriage system at a very young age. Proportion of women who had consummation by age 25 (0.97 to 0.99) is almost the same for all the age groups over the time (Table. 4.7). But there is gradual increase in age at consummation for the younger women in the state. Smaller proportion of women (0.13), who are in the age group of 15-19 years compared to older women (45-49 years) have



**Figure 4.5**  
**WOMAN'S AGE AT CONSUMMATION IN BIHAR**



Source: Computed from NFHS-2 data files

higher age at consummation. There is also decrease in the proportion of women who have entered in the effective sexual union at very young age, i.e., 14 years (Fig. 4.6). It has declined the proportion of women for the age group 45-49 years (0.16) to in the age group of 15-19 years (0.06), which shows the better maternal and child health in future. But still girls are cohabiting below the prescribed age, which is harmful for the physical and mental development of the girl.

**Table 4.7**  
**Woman's Age at Consummation in Uttar Pradesh**  
(Cumulative proportion of women consummated marriage before the exact age)

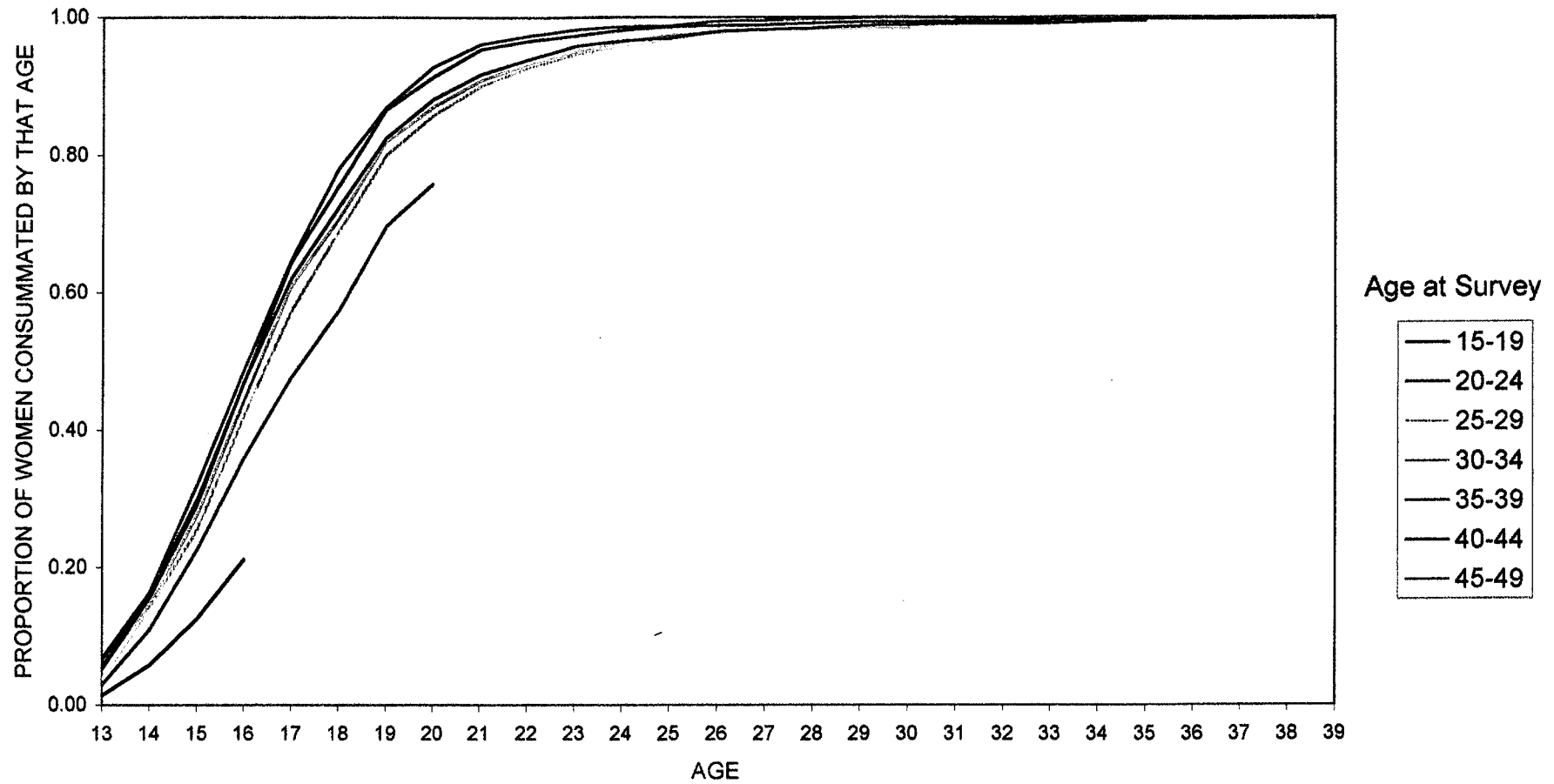
Age	Age of Women at survey						
	15-19	20-24	25-29	30-34	35-39	40-44	45-49
13	0.01	0.03	0.04	0.06	0.05	0.07	0.06
14	0.06	0.11	0.14	0.15	0.16	0.16	0.16
15	0.13	0.23	0.26	0.28	0.29	0.30	0.32
16	0.21	0.36	0.42	0.44	0.47	0.47	0.49
17		0.48	0.57	0.61	0.62	0.65	0.65
18		0.57	0.69	0.71	0.73	0.76	0.78
19		0.70	0.80	0.82	0.82	0.87	0.87
20		0.76	0.86	0.87	0.88	0.91	0.93
21			0.90	0.91	0.92	0.95	0.96
22			0.93	0.93	0.94	0.97	0.97
23			0.95	0.95	0.96	0.97	0.98
24			0.96	0.97	0.97	0.98	0.99
25			0.97	0.97	0.97	0.99	0.99
26				0.98	0.98	0.99	0.99
27				0.98	0.98	0.99	1.00
28				0.98	0.98	0.99	1.00
29				0.99	0.99	0.99	1.00
30				0.99	0.99	0.99	1.00
31					0.99	0.99	1.00
32					0.99	0.99	1.00
33					0.99	1.00	1.00
34					0.99	1.00	1.00
35					0.99	1.00	1.00
36						1.00	1.00
37						1.00	1.00
38						1.00	1.00
39						1.00	1.00
<b>Median age at consummation<sup>s</sup></b>	<b>N.C</b>	<b>17.22</b>	<b>16.53</b>	<b>16.35</b>	<b>16.20</b>	<b>16.16</b>	<b>16.06</b>
<b>No. of Ever-married Women</b>	<b>1082</b>	<b>1814</b>	<b>1763</b>	<b>1522</b>	<b>1302</b>	<b>1042</b>	<b>767</b>
<b>Proportion married</b>	<b>0.38</b>	<b>0.36</b>	<b>0.97</b>	<b>0.99</b>	<b>0.99</b>	<b>1.00</b>	<b>1.00</b>
<b>Estimated No. of women in the age group including never married women</b>	<b>2847</b>	<b>5039</b>	<b>1818</b>	<b>1537</b>	<b>1315</b>	<b>1042</b>	<b>767</b>

Note: N.C= Not calculated because less than 50 percent women have consummated marriage by age 20

<sup>s</sup> Include both ever married and never married women

Source: Computed from NFHS-2 data files

**Figure 4.6**  
**WOMAN'S AGE AT CONSUMMATION IN UTTAR PRADESH**



Source: Computed from NFHS-2 data files

**Table 4.8**  
**Woman's Age at Consummation in Rajasthan**  
(Cumulative proportion of women consummated marriage before the exact age)

Age	Age of Women at survey						
	15-19	20-24	25-29	30-34	35-39	40-44	45-49
13	0.02	0.03	0.04	0.04	0.04	0.04	0.03
14	0.05	0.09	0.12	0.10	0.10	0.11	0.08
15	0.16	0.19	0.22	0.22	0.22	0.20	0.19
16		0.35	0.39	0.44	0.41	0.41	0.44
17		0.51	0.56	0.60	0.60	0.58	0.61
18		0.62	0.66	0.71	0.70	0.72	0.72
19		0.75	0.79	0.82	0.82	0.84	0.82
20		0.82	0.84	0.86	0.88	0.89	0.87
21			0.91	0.91	0.93	0.95	0.94
22			0.93	0.94	0.95	0.97	0.96
23			0.95	0.96	0.96	0.98	0.97
24			0.97	0.97	0.97	0.98	0.98
25			0.98	0.98	0.98	0.99	0.98
26				0.99	0.98	0.99	0.99
27				0.99	0.99	0.99	0.99
28				0.99	0.99	0.99	0.99
29				1.00	0.99	0.99	0.99
30				1.00	0.99	0.99	0.99
31					0.99	1.00	0.99
32					0.99	1.00	0.99
33					0.99	1.00	1.00
34					1.00	1.00	1.00
35					1.00	1.00	1.00
36						1.00	1.00
37						1.00	1.00
38						1.00	1.00
39						1.00	1.00
<b>Median age at consummation<sup>5</sup></b>	<b>N.C</b>	<b>16.93</b>	<b>16.64</b>	<b>16.37</b>	<b>16.47</b>	<b>16.52</b>	<b>16.35</b>
No. of Ever-married Women	608	1361	1354	1163	1002	691	634
Proportion married	0.49	0.90	0.98	0.99	1.00	1.00	0.99
Estimated No. of women in the age group including never married women	1241	1512	1382	1175	1002	691	640

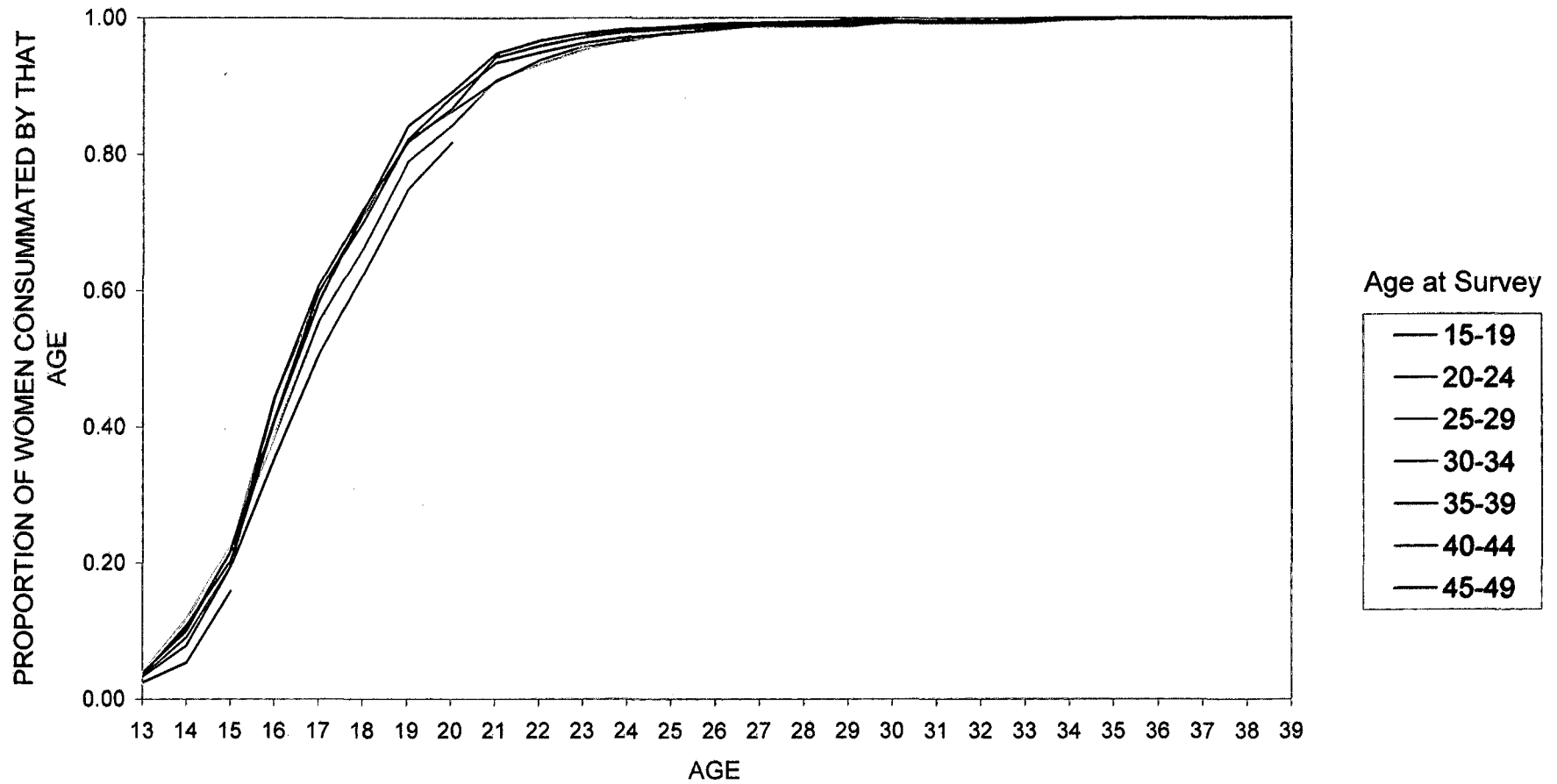
Note: N.C= Not calculated because less than 50 percent women have consummated marriage by age 20

<sup>5</sup> Include both ever married and never married women

Source: Computed from NFHS-2 data files

Rajasthan does not go along with the trend in other three states. The situation has stagnated over the last 30 years (Fig. 4.7). Proportion of women who enter the effective marriage by the age at 15 years (0.16 to 0.22) is quite high and is almost the same for

**Figure 4.7**  
**WOMAN'S AGE AT CONSUMMATION IN RAJASTHAN**



Source: Computed from NFHS-2 data files

younger as well as for older cohorts (Table 4.8). The data reveal that half of the women in the state start staying with their husband by the age at 17 years, which is also below the minimum legal age at marriage. That clearly pointed out the practice of child marriage and no awareness about the adverse effect of early marriage as well as consummation on maternal or reproductive health. Proportion of women, who have consummated by the age of 20 years remains the same for the age group 45-49 years (0.87) compared to age group 20-24 years (0.82) at the time of survey. Therefore, it is necessary to look upon the issue that what is the major cause in the state, which keeps the proportion of woman's age at consummation almost constant for such a long period of time. Female literacy rate is low in the state but is it the sole factor or some other factors are also interplaying to determine the age for the women? If we consider the median age at consummation in different age groups, it has not increased even a year (the rise is only 0.58 year) in the past 25 years for the women in Rajasthan.

Some improvements have been noticed in woman's age at consummation over the decades in Madhya Pradesh. The trends show an increase over the period (Fig. 4.8); however, it is far below the satisfactory level from health point of view for the women in the society. Proportion of women, who have had consummation by the age at 16 year has become half in the age group of 15-19 years (0.25) compared to older women (0.50) of age group of 45-49 years (Table 4.9), at the time of survey. It has been also observed that decline in the proportion of women, who have started staying with husband by age 13 years has fallen to a very low level. But almost all women have consummation by age 25 years and that trend remains the same over the last three decades. Therefore, it is clear that some changes have been occurred in recent years and still there are some universal customs for the women in all the age groups, which remain constant over the time. But it also shows that proportion of women who have started staying with their husband by the age at 20 years has declined, it was higher for the older cohorts (0.90) compared to women of age group 20-24 years (0.78). Therefore, there is up coming trend to increase the age at consummation with the passing years in the future in the state.

Table 4.9

**Woman's Age at Consummation in Madhya Pradesh**  
(Cumulative proportion of women consummated marriage before the exact age)

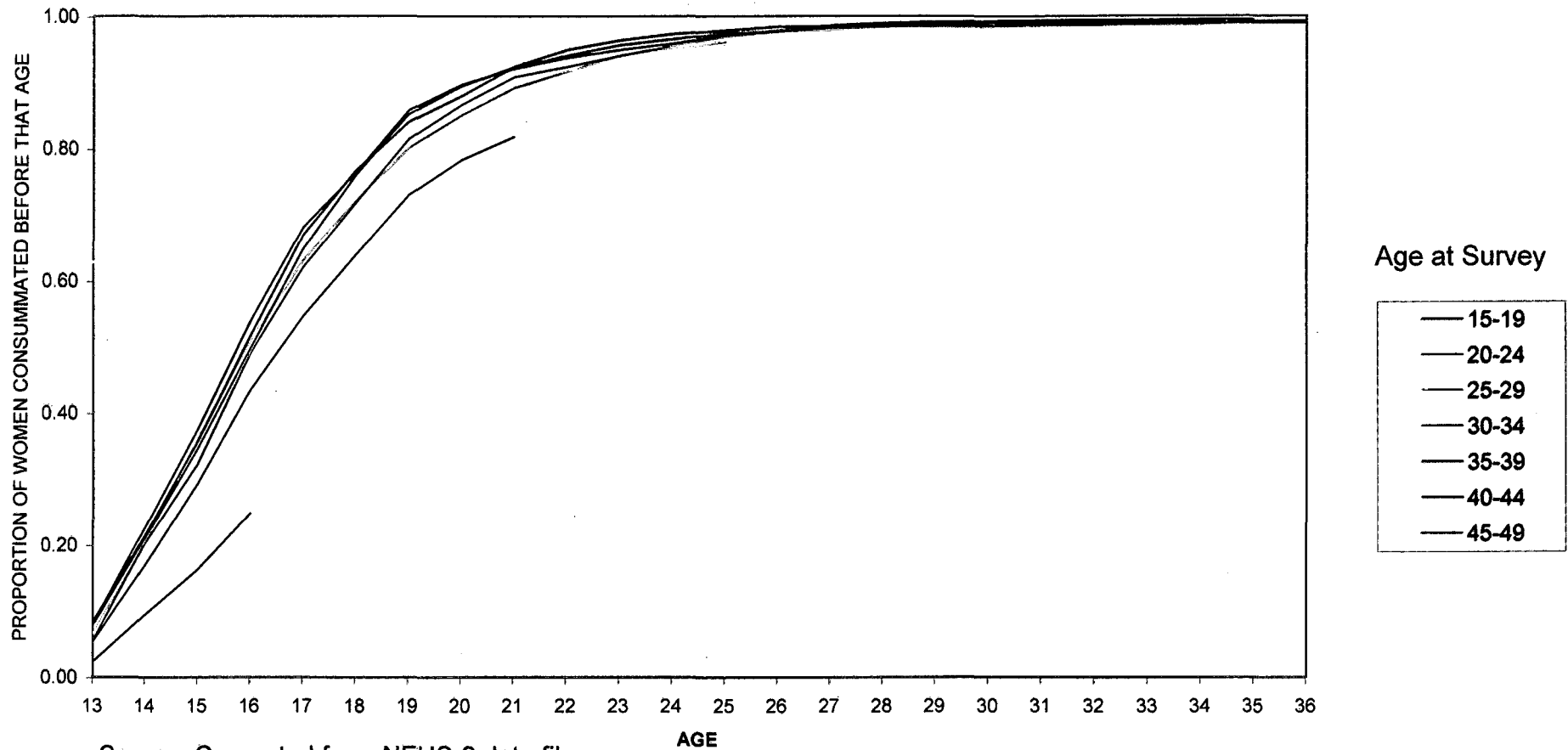
Age	Age of Women at survey						
	15-19	20-24	25-29	30-34	35-39	40-44	45-49
13	0.02	0.05	0.07	0.06	0.08	0.08	0.08
14	0.09	0.17	0.20	0.20	0.23	0.21	0.21
15	0.16	0.29	0.36	0.32	0.37	0.36	0.35
16	0.25	0.43	0.51	0.49	0.54	0.52	0.50
17		0.55	0.63	0.62	0.68	0.67	0.65
18		0.64	0.72	0.72	0.76	0.77	0.76
19		0.73	0.80	0.81	0.86	0.84	0.85
20		0.78	0.85	0.87	0.90	0.88	0.90
21		0.82	0.89	0.91	0.92	0.92	0.92
22			0.92	0.92	0.94	0.95	0.94
23			0.94	0.94	0.95	0.96	0.96
24			0.95	0.96	0.96	0.97	0.97
25			0.96	0.97	0.97	0.98	0.97
26				0.98	0.98	0.98	0.98
27				0.98	0.99	0.98	0.98
28				0.98	0.99	0.99	0.99
29				0.99	0.99	0.99	0.99
30				0.99	0.99	0.99	0.99
31					0.99	0.99	0.99
32					0.99	0.99	0.99
33					0.99	0.99	0.99
34					0.99	0.99	0.99
35					0.99	0.99	0.99
36						0.99	0.99
<b>Median age at consummation<sup>s</sup></b>	<b>N.C</b>	<b>16.58</b>	<b>15.93</b>	<b>16.07</b>	<b>15.76</b>	<b>15.87</b>	<b>16.0</b>
<b>No. of Ever-married Women</b>	<b>896</b>	<b>1293</b>	<b>1370</b>	<b>1175</b>	<b>956</b>	<b>697</b>	<b>554</b>
<b>Proportion married</b>	<b>0.42</b>	<b>0.85</b>	<b>0.96</b>	<b>0.98</b>	<b>0.99</b>	<b>0.99</b>	<b>0.99</b>
<b>Estimated No. of women in the age group including never married women</b>	<b>2133</b>	<b>1521</b>	<b>1427</b>	<b>1199</b>	<b>965</b>	<b>704</b>	<b>559</b>

**Note:** N.C= Not calculated because less than 50 percent women have consummated marriage by age 20

<sup>s</sup> Include both ever married and never married women

**Source:** Computed from NFHS-2 data files

**Figure 4.8**  
**WOMAN'S AGE AT CONSUMMATION IN MADHYA PRADESH**



Source: Computed from NFHS-2 data files



#### ***4.4 TRENDS IN WOMAN'S AGE AT FIRST BIRTH IN FOUR NORTH-CENTRAL STATES IN INDIA (ACCORDING TO NFHS-2, 1998-99)***

Marriage is the gateway to enter the sexual union and consummation is the beginning of the effective marriage for the girls but most important is age at first birth for the women because it affects the health of the mother as well as the child. Lower age of the mother at the time of childbirth leads to several pregnancy complications and also heads towards maternal and infant death. Therefore, this section of the chapter focuses on the woman's age at first birth. It is more appropriate to examine first birth interval but due to inaccuracy in the data, only age at first birth has been computed and trend over the years in four north central states in India analysed. Only ever married women of age group 15-49 years with at least one childbirth has been taken into consideration in this section of the study. The overall trends show that woman's age at first birth has decreased somewhat over the years in these states.

In Bihar, proportion of women who had their first child by the age at 25 years has remained almost the same over time (0.95) for the women in the age group of 25-29 years compared to 0.92 for women in the age group of 45-49 years (0.92). The trend shows that by 25<sup>th</sup> birthday, almost all women in the state (who ever had a birth) have the first birth (Table 4.10). More than half of the women have a child by the age at 19 years. So teenage pregnancy is more common in the state. The proportion of women, who has a child at very younger age, is also high and it shows little increase in the proportion over the time, because it was 0.08 proportion of women of the age group of 45-49 years, 0.06 for 30-34 and 0.09 for the age group of 15-19 years. For the age at first birth, between 16 years to 19 years the trend remains constant with almost the same proportion of women having their first child over the time (Fig 4.9). However, the age at marriage has increased and age at consummation also shows an increasing trend but surprisingly age at birth has decreased or remained nearly the same over the time.

**Table 4.10**  
**Woman's Age at First Birth in Bihar**  
(Cumulative proportion of women having their first child before exact age)

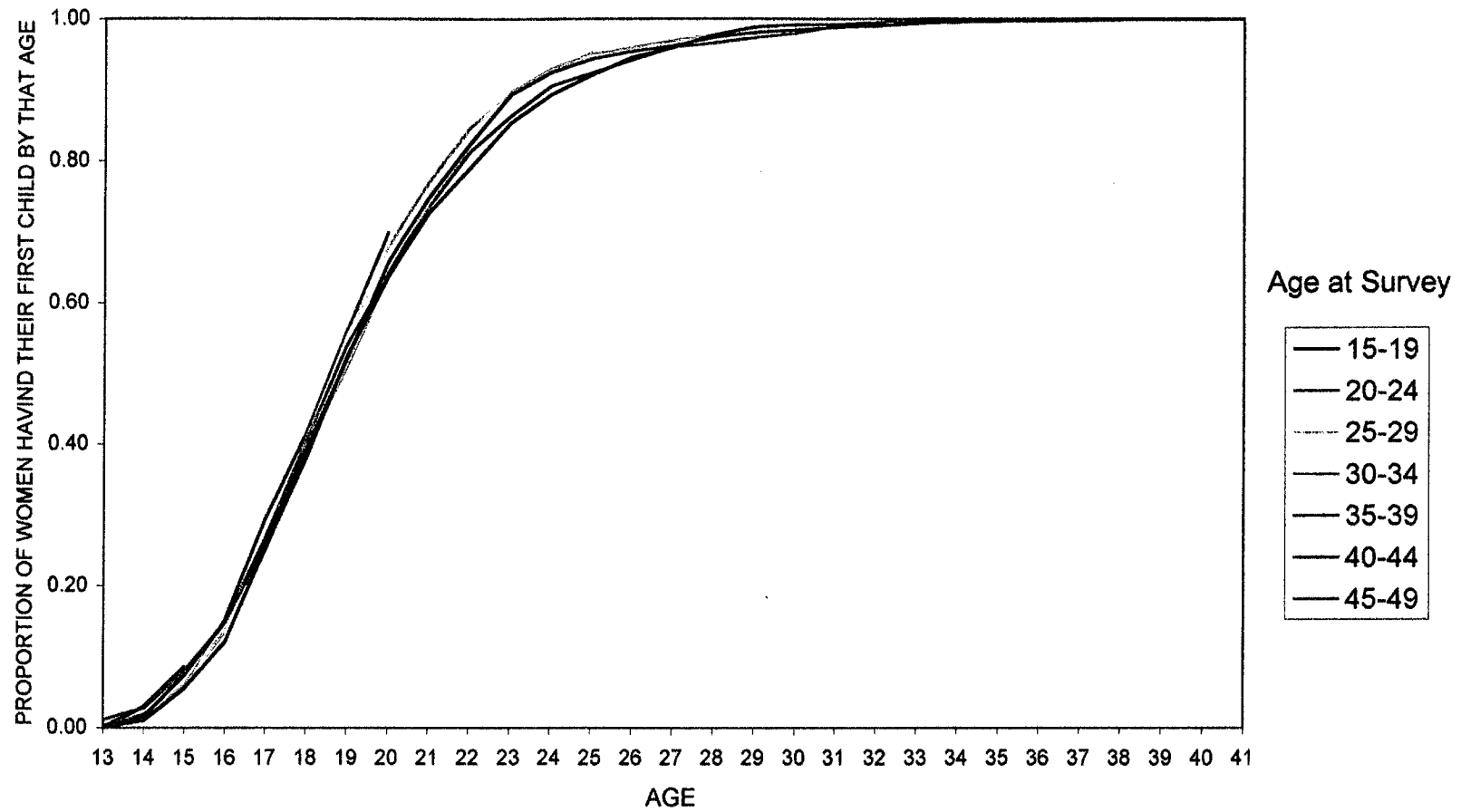
Age	Age of Women at Survey						
	15-19	20-24	25-29	30-34	35-39	40-44	45-49
13	0.00	0.00	0.00	0.00	0.00	0.00	0.01
14	0.03	0.02	0.01	0.01	0.01	0.02	0.03
15	0.09	0.05	0.05	0.06	0.06	0.07	0.08
16		0.15	0.15	0.14	0.12	0.15	0.15
17		0.29	0.27	0.25	0.25	0.26	0.27
18		0.42	0.41	0.39	0.38	0.39	0.40
19		0.56	0.55	0.51	0.53	0.52	0.54
20		0.70	0.68	0.64	0.64	0.66	0.64
21			0.77	0.74	0.73	0.75	0.73
22			0.85	0.82	0.79	0.82	0.81
23			0.89	0.90	0.85	0.89	0.86
24			0.93	0.93	0.89	0.93	0.91
25			0.95	0.95	0.92	0.94	0.92
26				0.96	0.95	0.95	0.94
27				0.97	0.96	0.96	0.96
28				0.98	0.98	0.97	0.97
29				0.98	0.99	0.98	0.97
30				0.99	0.99	0.98	0.98
31					0.99	0.99	0.99
32					1.00	0.99	0.99
33					1.00	0.99	1.00
34					1.00	1.00	1.00
35					1.00	1.00	1.00
36						1.00	1.00
37						1.00	1.00
38						1.00	1.00
39						1.00	1.00
40						1.00	1.00
41							1.00
<b>Median age at first birth<sup>5</sup></b>	<b>N.C</b>	<b>18.57</b>	<b>18.64</b>	<b>18.91</b>	<b>18.8</b>	<b>18.84</b>	<b>18.71</b>
No. of Ever-married Women	361	1157	1332	1051	892	746	586
Proportion married	0.46	0.89	0.98	0.99	0.99	1.00	1.00
Total adjusted No. of women in the age group including never married women	786	1300	1359	1062	910	746	586

Note: N.C= Not calculated because less than 50 percent women have their first child by age 20

<sup>5</sup> Include both ever married and never married women

Source: Computed from NFHS-2 data files

**Figure 4.9**  
**WOMAN'S AGE AT FIRST BIRTH IN BIHAR**



Source: Computed from NFHS-2 data files

**Table 4.11**  
**Woman's Age at First Birth in Uttar Pradesh\***  
(Cumulative proportion of women having their first birth before exact age)

Age	Age of Women at survey						
	15-19	20-24	25-29	30-34	35-39	40-44	45-49
13	0.00	0.00	0.00	0.01	0.00	0.00	0.01
14	0.02	0.02	0.02	0.03	0.02	0.02	0.01
15	0.08	0.08	0.06	0.07	0.08	0.07	0.04
16		0.16	0.15	0.15	0.14	0.15	0.10
17		0.28	0.26	0.27	0.23	0.26	0.19
18		0.41	0.40	0.40	0.36	0.40	0.30
19		0.54	0.54	0.56	0.49	0.53	0.43
20		0.68	0.65	0.65	0.60	0.65	0.57
21			0.76	0.75	0.72	0.76	0.67
22			0.83	0.82	0.80	0.81	0.78
23			0.89	0.87	0.85	0.85	0.83
24			0.92	0.90	0.90	0.89	0.88
25			0.95	0.93	0.93	0.92	0.90
26				0.96	0.95	0.94	0.93
27				0.97	0.96	0.95	0.95
28				0.97	0.97	0.97	0.96
29				0.98	0.98	0.98	0.97
30				0.98	0.99	0.99	0.98
31					0.99	0.99	0.99
32					0.99	0.99	0.99
33					0.99	0.99	0.99
34					0.99	1.00	1.00
35					0.99	1.00	1.00
36						1.00	1.00
37						1.00	1.00
38						1.00	1.00
39						1.00	1.00
40						1.00	1.00
41							1.00
42							1.00
<b>Median age at first birth<sup>s</sup></b>	<b>N.C</b>	<b>18.69</b>	<b>18.71</b>	<b>18.62</b>	<b>18.09</b>	<b>18.76</b>	<b>18.50</b>
<b>No. of Ever-married Women</b>	<b>489</b>	<b>1465</b>	<b>1680</b>	<b>1486</b>	<b>1279</b>	<b>1022</b>	<b>753</b>
<b>Proportion married</b>	<b>0.38</b>	<b>0.86</b>	<b>0.97</b>	<b>0.99</b>	<b>0.99</b>	<b>1.00</b>	<b>1.00</b>
<b>Total adjusted No. of women in the age group including never married women</b>	<b>1287</b>	<b>1703</b>	<b>1732</b>	<b>1501</b>	<b>1292</b>	<b>1022</b>	<b>753</b>

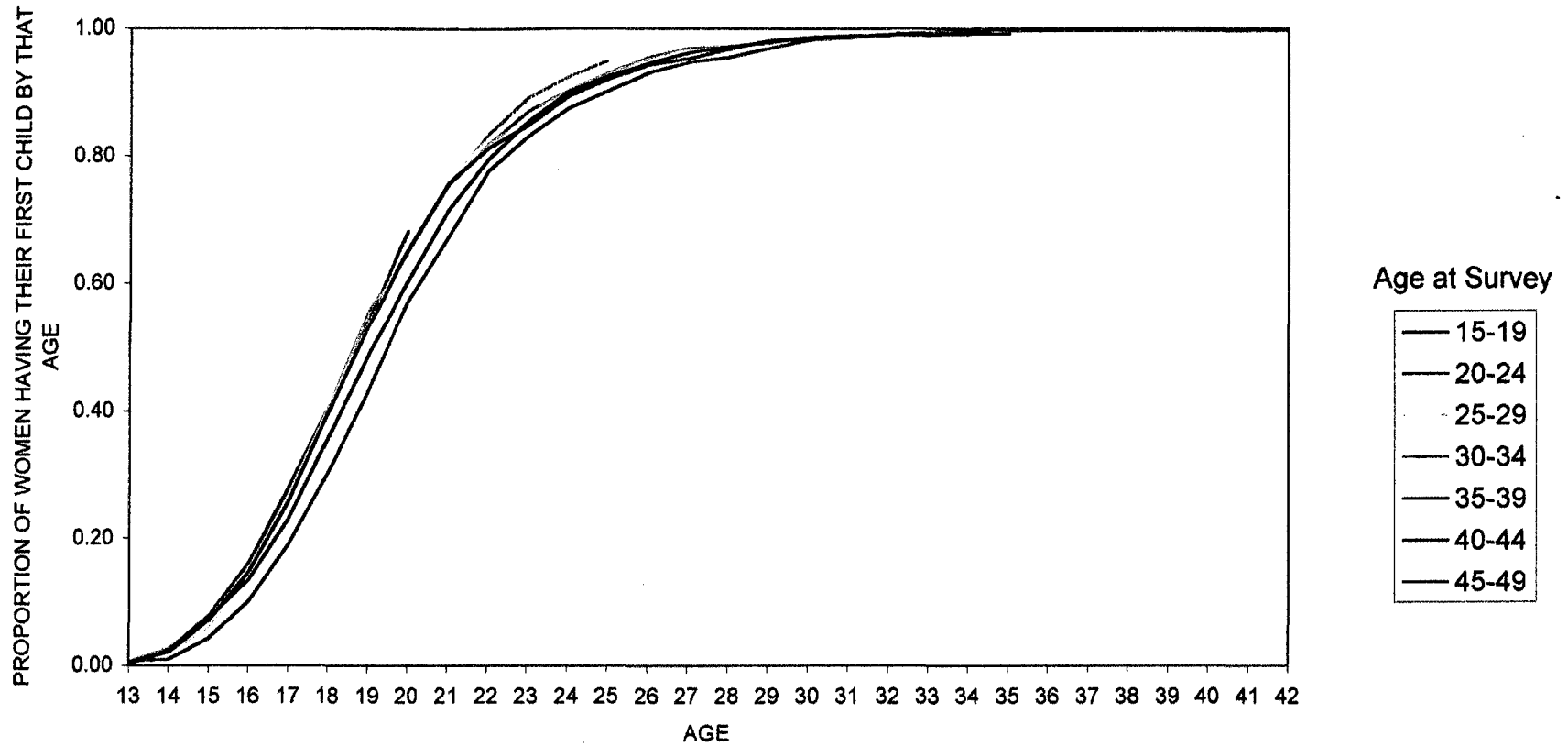
Note: N.C= Not calculated because less than 50 percent women have their first child by age 20

\*Only who has at least one birth

<sup>s</sup> Include both ever married and never married women

Source: Computed from NFHS-2 Data files

**Figure 4.10**  
**WOMAN'S AGE AT FIRST BIRTH IN UTTAR PRADESH**



Source: Computed from NFHS-2 data files

Uttar Pradesh also shows the same trend in woman's age at first birth, whereas, age at marriage and age at consummation have increased the highest compared to other three states in the region. It shows that smaller proportion of women in the age group of 45-49 years (0.04) had their first child at the age by 15 years compared to women of age group 15-19 years (0.08) who had at least a child birth at the time of survey (Table 4.11). Almost half of the women have a child by the age at 19 years in last three decades and the trend remains the same over the period (Fig. 4.10). The major finding of the trend is that more women are into the teen-age motherhood in recent years than the past in the state. It is not clear why, with the rise in literacy, should early childbearing become a little common.

Rajasthan, where age at marriage and age at consummation show a stagnation for last 30 years, similarly, age at first birth also remains nearly the same (Fig 4.11). By the age of 25 years, almost all women (0.90) have experienced at least one child birth (Table 4.12). The proportion of women, who has a child by the age of 15 years at the time of survey has increased in the younger age cohort from age group 45-49 years (0.03) to age group of 15-19 years (0.07). The data also reveal that proportion of women having their first kid has increased not only for the lower ages but for the higher ages also over the time. Therefore, it is universal increase in the proportion of women to have their first child at early age. It is clear that by the age of 19 years, less than half of women of the age group 35- 39 years (0.45), 40-44 years (0.41) and 45-49 years (0.42) have a birth, whereas, it become more than half for the age group 30-34 years (0.50) and 15-19 years (0.53). It shows the declining trend in the gap between age at consummation and the age at first birth among the women in the state.

Table 4.12

**Woman's Age at First Birth in Rajasthan\***  
(Cumulative proportion of women having their first birth before the exact age)

Age	Age of women at survey						
	15-19	20-24	25-29	30-34	35-39	40-44	45-49
14	0.02	0.01	0.01	0.02	0.01	0.01	0.01
15	0.07	0.04	0.04	0.06	0.04	0.03	0.03
16		0.10	0.11	0.12	0.10	0.09	0.09
17		0.22	0.22	0.25	0.21	0.16	0.19
18		0.37	0.34	0.35	0.33	0.26	0.31
19		0.53	0.47	0.50	0.45	0.41	0.42
20		0.68	0.60	0.62	0.59	0.50	0.54
21			0.73	0.74	0.73	0.60	0.66
22			0.82	0.82	0.81	0.69	0.74
23			0.88	0.88	0.88	0.81	0.82
24			0.93	0.92	0.91	0.86	0.86
25			0.96	0.94	0.94	0.90	0.90
26				0.97	0.96	0.92	0.94
27				0.98	0.98	0.95	0.96
28				0.99	0.98	0.96	0.97
29				1.00	0.99	0.97	0.98
30				1.00	0.99	0.98	0.98
31					1.00	0.98	0.98
32					1.00	0.99	0.98
33					1.00	0.99	0.99
34					1.00	0.99	0.99
35					1.00	1.00	0.99
36						1.00	0.99
37						1.00	1.00
38						1.00	1.00
39						1.00	1.00
<b>Median age at first birth<sup>5</sup></b>	<b>N.C</b>	<b>18.81</b>	<b>19.23</b>	<b>19.0</b>	<b>19.35</b>	<b>20.0</b>	<b>19.66</b>
No. of Ever-married Women	227	1119	1280	1130	981	675	623
Proportion married	0.49	0.90	0.98	0.99	1.00	1.00	0.99
Total adjusted No. of women in the age group including never married women	463	1243	1306	1141	981	675	629

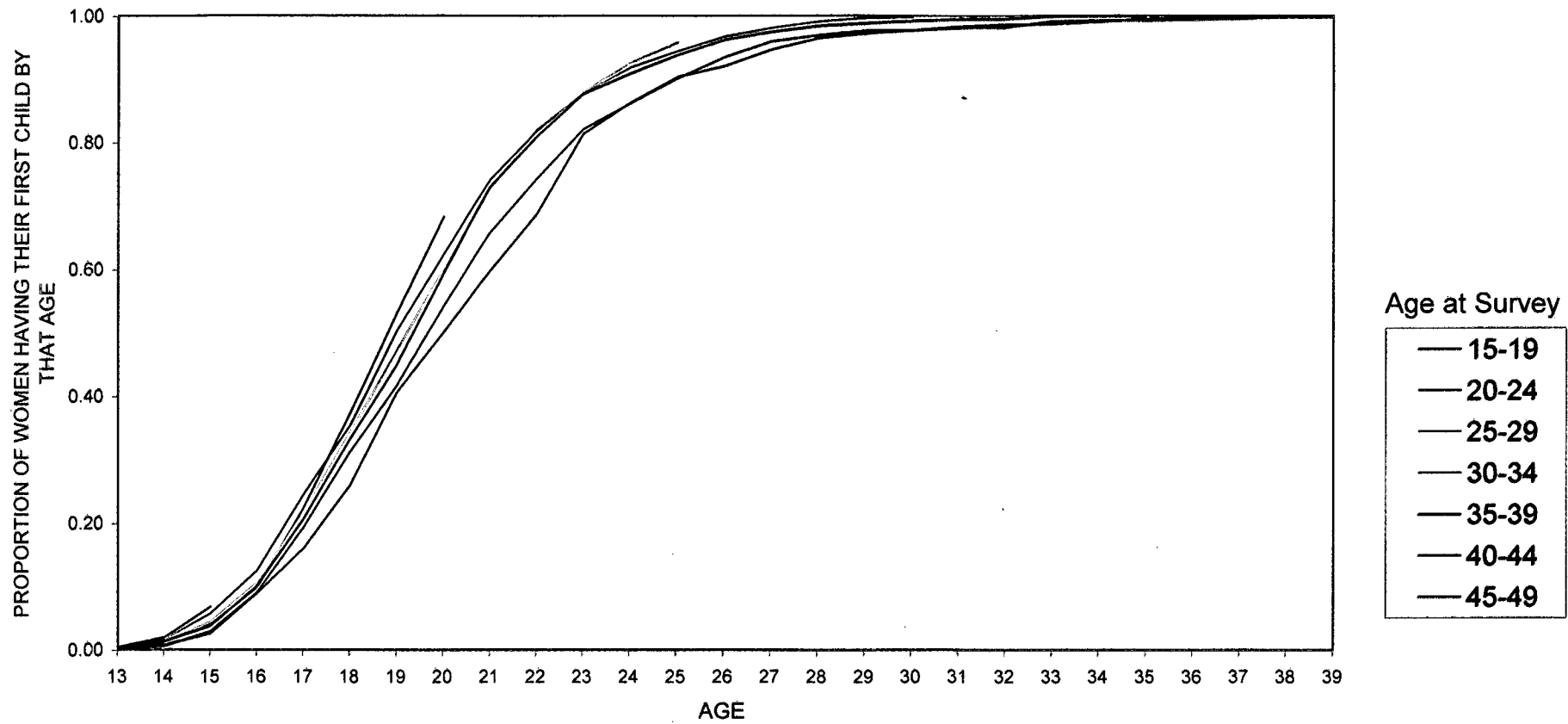
Note: N.C = Not calculated because less than 50 percent women have their first child by age 20

\*Only those who has at least one birth

<sup>5</sup> Include both ever married and never married women

Source: Computed from NFHS-2 data files

**Figure 4.11**  
**WOMAN'S AGE AT FIRST BIRTH IN RAJASTHAN**



Source: Computed from NFHS-2 data files



Table 4.13

**Woman's Age at First Birth in Madhya Pradesh\***  
(Cumulative proportion of women having their first birth before the exact age)

Age	Age of women at survey						
	15-19	20-24	25-29	30-34	35-39	40-44	45-49
13	0.00	0.00	0.01	0.00	0.00	0.00	0.00
14	0.03	0.03	0.03	0.02	0.03	0.02	0.02
15	0.10	0.10	0.10	0.08	0.10	0.08	0.07
16		0.22	0.22	0.19	0.20	0.19	0.16
17		0.35	0.35	0.30	0.33	0.31	0.26
18		0.49	0.50	0.43	0.46	0.43	0.37
19		0.60	0.60	0.56	0.59	0.55	0.52
20		0.70	0.71	0.66	0.70	0.67	0.64
21			0.79	0.76	0.81	0.77	0.73
22			0.85	0.83	0.85	0.84	0.80
23			0.89	0.88	0.89	0.87	0.86
24			0.92	0.91	0.92	0.90	0.90
25			0.94	0.93	0.94	0.94	0.93
26				0.95	0.95	0.95	0.94
27				0.97	0.96	0.96	0.95
28				0.97	0.97	0.97	0.97
29				0.98	0.98	0.98	0.97
30				0.98	0.99	0.98	0.98
31					0.99	0.99	0.98
32					0.99	0.99	0.98
33					0.99	0.99	0.99
34					0.99	0.99	0.99
35						0.99	0.99
36						0.99	0.99
37						0.99	0.99
38						0.99	0.99
39						0.99	0.99
40							0.99
<b>Median age at first birth<sup>s</sup></b>	<b>N.C</b>	<b>18.09</b>	<b>18.0</b>	<b>18.53</b>	<b>18.30</b>	<b>18.58</b>	<b>18.86</b>
No. of Ever-married Women	426	1109	1305	1130	929	681	544
Proportion married	0.42	0.85	0.96	0.98	0.99	0.99	0.99
Total adjusted No. of women in the age group including never married women	1014	1305	1359	1177	938	688	549

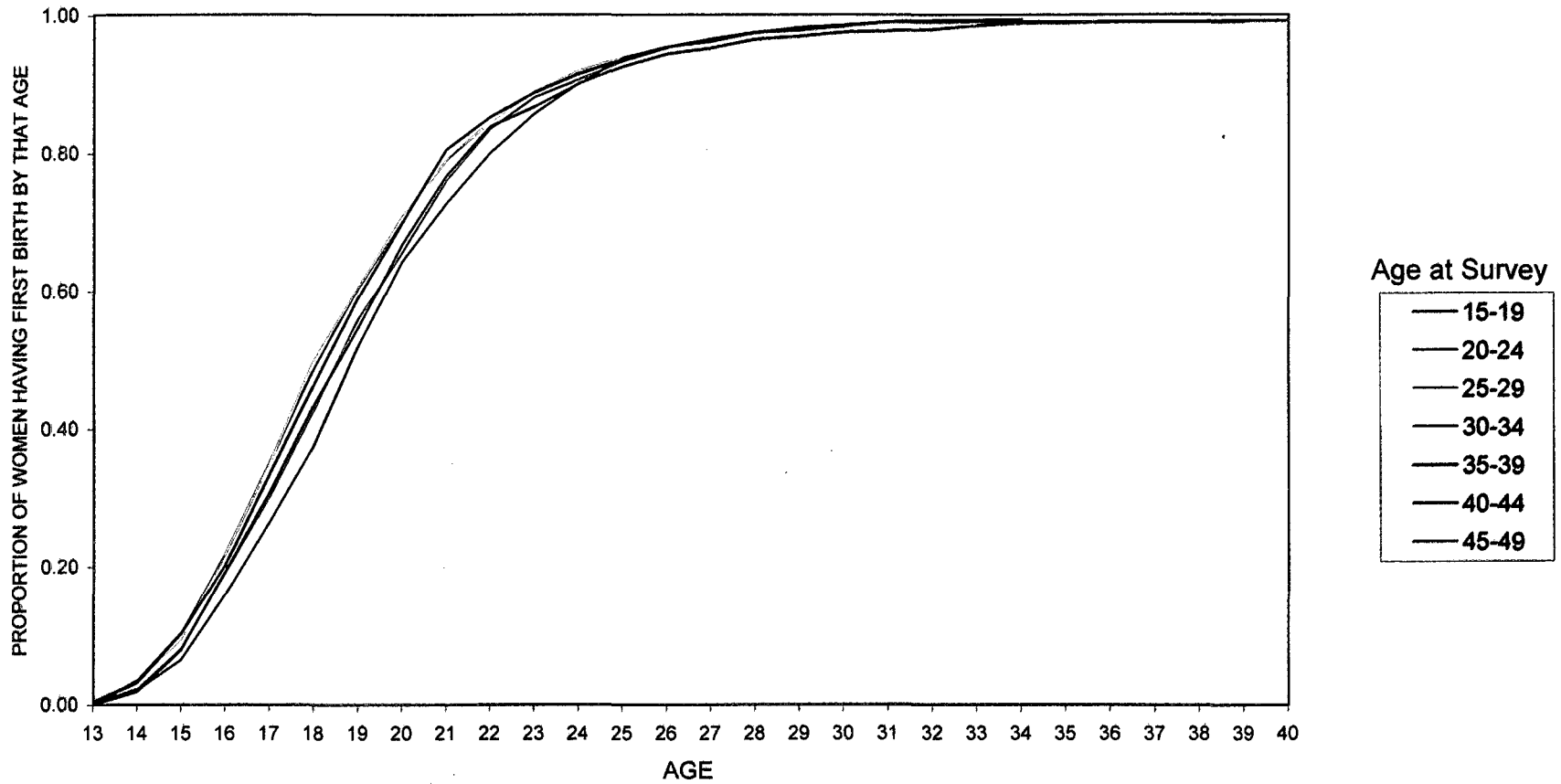
Note: N.C= Not calculated because less than 50 percent women have their first child by age 20

\*Only those who has at least one birth

<sup>s</sup> Include both ever married and never married women

Source: Computed from NFHS-2 data files

**Figure 4.12**  
**WOMAN'S AGE AT FIRST BIRTH IN MADHYA PRADESH**



Source: computed from NFHS-2 data files

It is universal in the region that there is a small decline in the woman's age at first birth. Madhya Pradesh shows the same trend along with the other three states in the region. In Madhya Pradesh, almost all women have experienced at least one child birth by reaching 25<sup>th</sup> birthday (Table 4.13). Proportion of women who have their first birth by the age of 25 years remained the same in the last three decades (Fig. 4.12). Most surprisingly, the proportion of women has increased more in the early ages at first birth than the higher ages. The proportion of women who have a child at the age by 18 years is higher in the age group of 20-24 years (0.49) than the women of the age group of 30-34 years (0.43), 35-39 years (0.46), 40-44 years (0.43) and 45-49 years (0.37). But the rate of increase in the proportion is not the same for all the ages at first birth over the period. It is higher in between 15 to 20 years at exact age of the first birth. It reveals that more women willingly or forcefully enter the motherhood at present years at a younger age compared to the past.

#### ***4.5 A BIRTH COHORT ANALYSIS OF TRENDS IN WOMAN'S MEDIAN AGE AT MARRIAGE, CONSUMMATION AND FIRST BIRTH IN FOUR NORTH-CENTRAL STATES IN INDIA (ACCORDING TO NFHS-2, 1998-99)***

National Family Health Survey in 1998-99 has collected data on various aspects from women of age group 15 to 49 years. Therefore, it is easy to compute the birth cohort of women from their current age and look upon in the past trends. This section focuses on the trend in woman's median age at marriage, consummation and first birth over the period with the birth cohort (Table 4.14). Median age has not been computed for the women in the age group of 15-19 years because less than 50 percent of women are married in that age. It is a kind of summary analysis of the above discussion of trends.

It shows that median age at marriage has increased in all the four states. Women who were born in first half of the 1950's had lower age at marriage compared to the women born in the 1970's. There is more than three years increase in the median age at marriage in Bihar within this period. Uttar Pradesh and Madhya Pradesh also experienced increase in age at marriage of 2 years and 1 year respectively for the women, who were born

**Table 4.14**  
**Woman's Median Age at Marriage, Consummation and First Birth\* according to Their Year of Birth in Bihar, Uttar Pradesh, Rajasthan and Madhya Pradesh, 1998-99**

	State	Year of Birth <sup>5</sup>						
		1948/49-52/53	1953/54-57/58	1958/59-62/63	1963/64-67/68	1968/69-72/73	1973/74-77/78	
<b>Median Age at Marriage</b>	Bihar	14.28	14.53	14.82	15.06	15.20	15.57	N.C
	Uttar Pradesh	14.30	14.63	14.84	15.15	15.46	16.12	N.C
	Rajasthan	15.18	15.26	15.06	15.20	15.37	15.80	N.C
	Madhya Pradesh	14.10	14.36	14.40	15.00	14.91	15.90	N.C
<b>Median Age at Consummation</b>	Bihar	15.50	15.37	15.50	15.61	15.66	16.08	N.C
	Uttar Pradesh	16.06	16.16	16.20	16.35	16.53	17.22	N.C
	Rajasthan	16.35	16.52	16.47	16.37	16.64	16.93	N.C
	Madhya Pradesh	16.00	15.87	15.76	16.07	15.93	16.58	N.C
<b>Median Age at First Birth*</b>	Bihar	18.71	18.84	18.80	18.91	18.64	18.37	N.C
	Uttar Pradesh	18.50	18.76	18.09	18.62	18.71	18.69	N.C
	Rajasthan	19.66	20.00	19.35	19.00	19.23	18.81	N.C
	Madhya Pradesh	18.86	18.58	18.30	18.53	18.00	18.09	N.C

**Note:** N.C = Not Calculated because less than 50 percent women are married/ consummated marriage/ have had their first child by age 20

\* Only those who has at least one birth

<sup>5</sup> Include both ever married and never married women

**Source:** Computed from NFHS-2 (1998-99) data files

between 1950 to 1970. Rajasthan shows a different trend in age at marriage for the girls and situation remains constant for the girls born before or after the independence, in the state. The status of woman has not increased at all in the state in terms of age at marriage. Median age at marriage is still below the 16 years, whereas, it was 15.18 years for those born in between 1948/49 to 1952/53 and become 15.80 years for women of the birth cohort 1973/74 to 1977/78.

Woman's median age at consummation also shows the same trend as woman's median age at marriage in these states. There is a marginal increase of 0.50 year to 1 year in all these four states over the period. Only Uttar Pradesh shows more than a year increase for the women of birth year between 1948/49 to 1952/53 (16.06 years) compared to those born between 1973/74 to 1977/78 (17.22 years). In Rajasthan, Bihar and Madhya Pradesh, the situation remains almost the same for the past 25 years. Therefore, it has been observed that the gap between age at marriage and age at consummation decreased over the period due to the increase in the age at marriage. It is also clear the age at marriage has been increasing for the girls over time but age at effective marriage remained almost constant, however, age at effective marriage is more important from health point of view and which needs to be raised.

Median age at first birth shows a declining trend for women who were born in 1950's to 1970's in all states except Uttar Pradesh in the study area. However, it is higher than the minimum legal age at marriage, but biologically it is too early to bear a child for a woman because the reproductive system of a woman is not fully developed by that age. Surprisingly, over the time median age at first birth declined, younger women who were born in later half of 1960's onwards in Bihar have lower age first birth than who were born before 1968/69 to 1972/73. A gradual decline has been seen in Rajasthan with the women who were born in 1963/64 to 1967/68 onwards. There is marginal fluctuation in Madhya Pradesh but it also has a declining trend. Only Uttar Pradesh has shown a marginal increase over the last 25 years but also smaller fluctuations in different points of time. It is clear that for women, who were born in the recent years, age at first birth has not advanced.

## *Chapter 5*

*Socio-economic Differentials in Woman's Median  
Age at Marriage, Consummation and First Birth  
in four North-central States in India*

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## **CHAPTER 5**

### **SOCIO-ECONOMIC DIFFERENTIALS IN WOMAN'S MEDIAN AGE AT MARRIAGE, CONSUMMATION AND FIRST BIRTH IN BIHAR, UTTAR PRADESH, RAJASTHAN AND MADHYA PRADESH**

This chapter deals with the influence of various socio-economic factors on woman's median age at marriage, consummation and first birth in four selected states, viz., Bihar, Uttar Pradesh, Rajasthan and Madhya Pradesh. The analysis has focused on the socio-economic differentials among ever-married women of age group of 25-49 years. Though data from the National Family Health Survey-2 (NFHS-2) are available for women of ages 15-49, in the younger age groups many women were not married by the survey date and obviously the age at marriage for them is not available. However, it has been observed that more than 98 percent women in these states were married by the age 25 years (Chapter 4). Therefore, median ages at marriage and consummation with various socio-economic factors are computed for women of age group 25-49 years. To calculate the median age at first birth for the women of age group 25-49 years, only those are considered who had had at least one birth at the time of the survey. This chapter presents the differentials without significance tests and only gross differentials have been shown. The next chapter examines if the influences of various factors are statistically significant.

To show the differentials in woman's median age at marriage, consummation and first birth, mostly socio-economic factors like Place of residence (urban and rural), Religion (Hindu and Non Hindu), Castes (scheduled Castes, Scheduled Tribe, Other Backward Castes and Others as Forward Castes), Educational level of women (Illiterate, Primary, Secondary and Higher) and Household standard of living (Low, Medium and high) are used.

## 5.1 DIFFERENTIALS IN WOMAN'S MEDIAN AGE AT MARRIAGE

Marriage is universal in nature in India. There is a tendency to marry at younger age for the girls; therefore, age at marriage is comparatively low in India than many other countries. Age at marriage is very low in four north-central states in India, more precisely lower than the national average also, viz., Bihar, Uttar Pradesh, Rajasthan and Madhya Pradesh. But within the states, it also varies across the different socio-economic backdrop of the women. This section of present study is mainly focused on the socio-economic differentials on the woman's median age at marriage (Table 5.1).

In Bihar, median age at marriage for female is 15.87 years. It varies with the place of residence and urban woman delays her marriage by 1.6 years than the rural woman in the state. But among the religious groups, mostly Hindu and non-Hindus, the difference is less than a year (0.65 years). Similarly, the median age doesn't vary much across the different caste groups, other backward castes (14.57 years) and scheduled castes (14.06 years) have lower median age at marriage compared to scheduled tribes (15.92 years) and higher castes, commonly known as 'others' (15.99 years). There is not much difference with the household standard of living with the age at marriage, however, women belonging to higher standard of living have higher age at marriage (16.84 years) compared to women from lower (14.48 years) and medium (14.98 years) standard of living. But there is marked difference in age at marriage with the educational attainment of the women in the state. It increases almost one year each from Illiterate (14.47 years) to primary (15.44 years) to secondary (16.43 years) and a large rise of 2.5 years for the women with higher education (18.96 years). It denotes that the education has a large impact on the age at marriage.

Place of residence and religion have an impact on the woman's age at marriage in Uttar Pradesh. The median is almost three years higher among the urban women (17.49 years) than the rural women (14.52 years) and 1.18 years higher among Non Hindu (16.02 years) groups than the Hindus. Age at marriage is the highest among the higher castes (16.06 years) compared to scheduled castes, scheduled tribe and other backward castes, who have almost 14 years as the age at marriage. There is not much difference with the



standard of living and only women with higher standard of living have higher age at marriage (17.61 years) compared to low and medium categories. There is a sharp increase in the age at marriage with the increase in the educational level of the women in the state, from 14.37 years for the illiterate to 20.99 years for the women with higher education with the gradual increase from illiterate to primary to secondary level of education. Therefore, it shows that place of residence and educational attainment play a role to decide the woman's age at marriage in Uttar Pradesh.

**Table 5.1**

**Median age at marriage among women age 25-49 years at time of survey by selected socioeconomic variables in four selected states, 1998-99**

Background Characteristics	States							
	Bihar		Uttar Pradesh		Rajasthan		Madhya Pradesh	
	Median age at marriage	Total No. of women	Median age at marriage	Total No. of women	Median age at marriage	Total No. of women	Median age at marriage	Total No. of women
<b>Place of residence</b>								
Urban	16.29	522	17.49	1389	16.23	1209	16.66	1386
Rural	14.73	4254	14.52	5007	14.63	3635	13.90	3365
<b>Religion</b>								
Hindu	14.73	3984	14.84	5425	15.05	4331	14.41	4327
Non Hindu	15.38	702	16.02	970	15.53	513	16.91	424
<b>Caste</b>								
Others (Non SC/ST/OBC)	15.99	984	16.06	3170	15.58	2252	16.26	1205
Scheduled Caste	14.06	936	13.95	1175	13.92	826	13.10	693
Scheduled Tribe	15.92	394	14.32	133	15.16	663	14.46	902
Other Backward Caste	14.57	2462	13.82	1626	14.25	1098	14.26	1948
<b>Educational level</b>								
Illiterate	14.47	3681	14.37	4401	14.39	3698	13.64	3082
Primary	15.44	328	15.36	822	15.59	460	14.96	815
Secondary	16.43	607	17.22	684	17.51	475	17.34	419
Higher	18.96	160	20.99	486	20.90	210	21.19	424
<b>Household Standard of living</b>								
Low	14.48	2470	14.13	1789	14.82	1121	13.81	1401
Medium	14.98	1775	14.79	3247	14.65	2549	14.34	2347
High	16.84	529	17.61	1177	16.31	1134	17.04	988
<b>Total</b>	<b>15.87</b>	<b>4776</b>	<b>15.05</b>	<b>6396</b>	<b>15.10</b>	<b>4844</b>	<b>14.64</b>	<b>4752</b>

Source: Computed from NFHS-2 (1998-99) data files

The situation is a bit different in Rajasthan, where religion doesn't have an impact on age at marriage (15 years on an average) and it also does not differ across the caste groups, whereas, Scheduled castes have the lowest age at marriage (13.92 years) and others have the highest age at marriage (15.58 years). Urban women have higher age at marriage by 1.6 years compared to rural women (14.63 years) and it is higher with the higher standard of living (16.31 years) than the women with low and medium standard of living by almost 1.5 years. But there is 6.5 years of increase from the illiterate (14.39 years) to higher educated (20.90 years) women. It shows gradual increase of 1 year from illiterate to primary educated and 2 years increase from primary to secondary educated women. But it gives us an idea that women who are highly educated can delay their marriage due to educational purpose as long as they reach the minimum legal age of marriage (18 years).

Madhya Pradesh has the lowest woman's median age at marriage (14.64 years) among these four states. There are vast differences in the median age at marriage with the different socio-economic differentials within the states. Urban women (16.66 years) have higher age at marriage than rural women (13.90 years); similarly, non-Hindus (16.91 years) have higher age at marriage compared to the Hindu (14.41 years) women. It also varies within the different castes groups, higher castes have two to three years higher age at marriage (16.26 years) than Scheduled castes, scheduled tribes and other backward castes. Age at marriage is very low among illiterate (13.64 years) and primary educated (14.34 years) and comparatively higher among women with secondary (17.34 years) and higher (21.19 years) education. Therefore, it depicts clearly that the women with higher education have higher age at marriage and education is an important factor that pushes age at marriage to a higher level. Apart from the educational background of the women, household standard also has an impact on the woman's age at marriage in Madhya Pradesh. It is 13.81 years and 14.34 years for the women with low and medium standard of living respectively, whereas, it is quite higher for the women with higher standard of living (17.04 years). The overall picture shows a disparity in age at marriage within the state across the different predictor variables.

## 5.2 DIFFERENTIALS IN WOMAN'S MEDIAN AGE AT CONSUMMATION

In India, still child marriages are being performed in remote areas mainly in villages; therefore, there is a custom of dual marriage system where girls are married before reaching menarche and consummation takes place after attaining puberty. So there is a gap between age at marriage and age at consummation. It has been observed that there is a rise in age at marriage but it is more important to look upon the age at consummation, because it is the entry to the sexual union within the marriage system in India. As the age at marriage is low in these four north-central states in India and also child marriage still persists, median age at consummation has been calculated separately to bring out the socio-economic differentials among the ever-married women of 25-49 years in these states. NFHS-2 has collected data on age at cohabitation with husband and taken 12 years of age as the base line. It has been considered that mostly Indian women attain their puberty at the age of 12 years and no sexual intercourse would take place below that age even though the girl is married. But median age at consummation is calculated for the analysis in the present study among the women of age group of 25-49 years to avoid the truncation of data by the younger women in the study. Surprisingly, in all these states median age at consummation is still below the minimum legal age at marriage, which leads to the reproductive health problems as well as hampers psychological development of the girls (Table 5.2).

Overall woman's age at consummation is low in Bihar (16.54 years). But it doesn't vary within the religions and the caste groups; only higher castes (17.22 years) have a little higher age at consummation compared to other lower castes. Place of residence and household standard of living show difference within them, whereas, urban women (17.46 years) have one year higher age at consummation than their rural counterparts. Similarly, women with high standard of living (18.07 years) have higher age at consummation compared to women with medium and low standard of living. There is a marginal difference observed between women with secondary education (17.75 years) with illiterate and primary educated women and it is 16.26 years and 16.73 years for illiterate and women with primary education respectively. But age at consummation is the highest among the highly educated women (20.09 years) in the state. Therefore, it depicts a clear

picture that only place of residence, educational level and some extent standard of living effect the age at consummation but these factors are inter-related also.

The scenario is more or less the same in Uttar Pradesh also with lower median age at consummation of 16.31 years. There is difference in median age at consummation with the place of residence, educational level and with higher standard of living with others. Religion doesn't have any effect on it and it is almost same for the Hindu and non Hindu (16.50 years on an average). It also shows a marginal variation among the castes groups and Others (16.92 years) and Other Backward Castes (16.83 years) have higher age at consummation than Scheduled Castes (15.74 years) and Scheduled Tribes (15.78 years). Urban women consummate at a higher age (18.11 years) than rural women (15.98 years). It is still low among the illiterate women (15.85 years) but surprisingly it is the lowest among the women with primary education (15.37 years). However, it increases 2.5 years and 3 years with the increase in the educational level from primary to secondary and secondary to higher respectively. There is a gradual increase with increase in the household standard of living in the state. It is the lowest (15.70 years) with the low standard of living and the highest with the higher standard of living (18.17 years). Here, the differences in age at consummation show that it doesn't differ with the religion or caste group rather it has been more affected by economical and educational backdrop of the respondents.

In Rajasthan, where child marriage is still a common practice, median age at consummation (16.34 years) almost shows the same trend as in the other three states. There is not much difference across the religions (16.32 years for Hindu and 16.54 years for non Hindu) and castes (close to 16.0 years) but it differs mostly with place of residence and standard of living as well as with educational levels of the women. It is higher in urban areas (17.41 years) than the rural areas (16.12 years) and a year higher with high standard of living (17.30 years) among three categories. But education has a greater impact on the age at consummation, because this is the only factor, which helps women to delay their age at consummation. It shows a striking picture across the different educational levels of the women in the state. It is 16.00 years for the illiterate women but also very low for the women with primary education, which gives an idea of

school drop out due to attaining puberty as well as performing *Gauna* (going to husband's house forever and consummation starts).

Table 5.2

Median age at consummation among women age 25-49 years at time of survey by selected socioeconomic variables in four selected states, 1998-99

Background characteristics	States							
	Bihar		Uttar Pradesh		Rajasthan		Madhya Pradesh	
	Median age at consummation	Total No. of women	Median age at consummation	Total No. of women	Median age at consummation	Total No. of women	Median age at consummation	Total No. of women
<b>Place of residence</b>								
Urban	17.46	522	18.11	1389	17.18	1209	17.41	1386
Rural	16.46	4254	15.98	5007	16.12	3635	15.47	3365
<b>Religion</b>								
Hindu	16.55	3984	16.23	5425	16.32	4331	15.78	4328
Non Hindu	16.34	702	16.82	971	16.54	513	17.48	424
<b>Caste</b>								
Others (Non SC/ST/OBC)	17.22	984	16.92	3171	16.63	2252	17.12	1205
Scheduled Caste	16.11	936	15.74	1175	16.10	826	15.28	693
Scheduled Tribe	16.67	394	15.78	133	16.38	663	15.44	903
Other Backward Caste	16.44	2462	16.83	1626	15.92	1098	15.72	1948
<b>Educational level</b>								
Illiterate	16.26	3681	15.85	4402	16.00	3698	15.31	3083
Primary	16.73	328	15.37	822	16.50	460	15.97	815
Secondary	17.75	607	17.83	684	17.98	475	17.94	429
Higher	20.09	160	21.00	486	20.96	210	21.35	424
<b>Household Standard of living</b>								
Low	16.22	2470	15.70	1789	16.06	1121	15.28	1401
Medium	16.67	1775	16.13	3247	16.10	2549	15.76	2347
High	18.07	529	18.17	1178	17.30	1174	17.87	988
<b>Total</b>	<b>16.54</b>	<b>4776</b>	<b>16.31</b>	<b>6396</b>	<b>16.34</b>	<b>4844</b>	<b>15.89</b>	<b>4752</b>

Source: Computed from NFHS-2 (1998-99) data files

But women with secondary education have comparatively higher age at consummation (17.98 years) and it is the highest among the higher educated women (20.96). However, women with higher education are only very low percentage of the total number of women and the state with the lowest female literacy rates in India needs more attention to raise the age at consummation for the women with lower educational level, mostly illiterate.

Madhya Pradesh has the lowest median age at consummation (15.89 years) among the four states along with the lowest age at marriage. The state depicts a different picture in terms of socio-economic factors that act upon woman's median age at consummation compared to other three states. There is remarkable difference in each predictor variables on age at consummation in the state. Urban women have two years higher age at consummation than the rural women (15.47 years), because the state has lower level of urbanization and physical ruggedness of the state also obstructed spread the modernization. It is higher for the non-Hindus (17.78 years) than Hindu women. The relatively large Christian population in the states leads to the higher age at consummation among the non-Hindus. Higher castes have higher age at consummation (17.12 years) compared to Scheduled Castes, Scheduled Tribes and Other Backward Castes (15.50 years on an average). It may be the effect of standard of living of the women because age at consummation is the highest for the women with higher standard of living (17.87 years). In Madhya Pradesh, economically well off sections are dominated by upper castes people. Educational attainment of the women also has effect but still with primary education (15.97 years), age at consummation is low as for the illiterate (15.31 years). However, it is higher for the higher level of education, 17.94 years and 21.35 years for women with secondary and higher education respectively. Clearly higher education brings on higher age at consummation in Madhya Pradesh.

### **5.3 DIFFERENTIALS IN WOMAN'S MEDIAN AGE AT FIRST BIRTH**

Woman's age at first birth is a good indicator of the health status and woman's empowerment in the society. Because it has been pointed out that lower age at first birth leads to the pregnancy complication and higher maternal and infant death. In India, overall age at the first birth is low and it is much lower in the north-central states. But in all these four states, where age at marriage and consummation is below the minimum legal age at marriage, age at first birth is a little higher than 18 years. In this section, to focus on the socio-economic differentials in the age of the mother at the time of their first birth, median age has been calculated (Table 5.3).

In Bihar, where women are married at younger age and also consummated marriage early, age at first birth (18.73 years) is also not high. It does not vary between the Hindu (18.78 years) and Non Hindu (18.41 years) and also across the different castes groups, only higher castes (19.18 years) have little higher (less than one year) age at first birth than the other castes (SC/ST/OBC). The variation is not large with the place of residence also, urban women have slightly higher (0.60 years) age at first birth than the rural women (18.67 years). Similarly, standard of living does not have much influence on it. It is one year higher for the women with high standard of living (19.87 years) than the women with low and medium standards of living. The effect of education on it is evident but only for the secondary and higher education and it does not vary between illiterate (18.49 years) and women with primary education (18.67 years). It increases by one year with the secondary level of education and the highest is seen for the higher educated (21.54 years) women in the state.

A similar scenario prevails in Uttar Pradesh also. The age at first birth doesn't vary with the religion and castes groups. It is on an average 18.5 years for Hindu and non-Hindu women and lower castes (SC/ST/OBC), only higher for the upper caste women (19.33 years). It is 1.5 years higher for the urban women than their rural counterparts (18.61 years). It is the highest among the women belonging to high standard of living (20.32 years), whereas it is 18.19 years and 18.79 years for women who belong to low and medium standard of living respectively. There is not much variation with the low educational level, only higher education (22.63 years) makes the difference in the state. Therefore, it is clear that women with level of primary education has the same risk to expose to the lower age at childbearing and only pursuing the higher education helps them to delay to bear their first child in Uttar Pradesh

Rajasthan, with low age at marriage and age at consummation shows a different picture in terms of woman's median age at first birth (19.25 years) within the study area. There is no marked variation in age at first birth with the different socio-economic backgrounds of the respondent in the state, apart from educational attainment.

**Table 5.3**  
**Median age at first birth among women\* age 25-49 years at time of survey by their exact age and selected socioeconomic variables in four selected states, 1998-99**

Background characteristics	States							
	Bihar		Uttar Pradesh		Rajasthan		Madhya Pradesh	
	Median age at first birth	Total No. of women	Median age at first birth	Total No. of women	Median age at first birth	Total No. of women	Median age at first birth	Total No. of women
<b>Place of residence</b>								
Urban	19.27	502	20.00	1337	19.67	1167	19.59	1331
Rural	18.67	4105	18.61	4883	19.12	3522	17.96	3258
<b>Religion</b>								
Hindu	18.78	3851	18.86	5274	19.28	4188	18.32	4185
Non Hindu	18.41	678	18.77	946	19.07	501	18.93	404
<b>Caste</b>								
Others (Non SC/ST/OBC)	19.18	951	19.33	3053	19.49	2182	19.71	1147
Scheduled Caste	18.30	906	18.39	1143	19.09	801	17.83	675
Scheduled Tribe	18.76	377	18.72	129	19.25	631	17.46	862
Other Backward Caste	18.73	2375	18.50	1607	18.99	1071	18.28	1902
<b>Educational level</b>								
Illiterate	18.49	3562	18.43	4299	18.99	3583	17.79	2991
Primary	18.67	318	18.79	793	19.92	453	18.45	785
Secondary	19.64	579	19.73	665	19.89	455	19.57	412
Higher	21.54	148	22.63	461	21.60	197	22.75	400
<b>Household Standard of living</b>								
Low	18.43	2387	18.19	1748	19.03	1074	17.70	1353
Medium	18.89	1712	18.79	3164	19.12	2479	18.18	2268
High	19.87	506	20.32	1129	19.79	1097	20.06	953
<b>Total</b>	<b>18.73</b>	<b>4607</b>	<b>18.85</b>	<b>6220</b>	<b>19.25</b>	<b>4689</b>	<b>18.38</b>	<b>4589</b>

Note: \*Only those who have had at least one child

Source: Computed from NFHS-2 (1998-99) data files

It is almost the same for the women who belong to urban (19.67 years) and rural (19.12 years) areas, similarly with the Hindu (19.28 years) and non-Hindu (19.07 years). It is also nearly the same for the all the castes in the states, which denotes that the custom has diffused from higher castes to lower castes and they are also performing the same rituals as the higher castes are performing. Household standard of living also doesn't play any role to determine the women age at first birth, it remains the same for all the classes with little higher for the women with high standard of living (19.79 years), otherwise, it is almost 19 years. Illiterate women have the lowest age at first birth (18.99 years) but it is only a year higher for the women with primary and secondary education, 19.92 years and 19.89 years respectively. On the other hand, women who are highly educated have comparatively higher age at their first birth (22.60 years). Apparently, the socio-



economic factors other than education do not have much effect on the woman's age at first birth in the state.

Religion is the only factor, which doesn't have any influence on the woman's age at first birth in Madhya Pradesh. Otherwise, it varies with the all predictor variables within the state. Rural women have their first child 1.5 years earlier than the urban women (19.59 years). Among the caste groups it is the highest for the higher caste women (19.71 years) but low for the scheduled caste (17.83 years) and scheduled tribe (17.46 years), whereas women belonging to other backward castes have their first birth by the age of 18.28 years. Household standard of living also plays an important role to determine the age for the women to have their first child, because in Madhya Pradesh social stratification is very rigid as well as only upper castes people have the higher standard of living and can avail the higher education and all modern facilities. Therefore, women belonging to this class have the highest age at first birth (20.06 years) and women with low and medium standard of living have comparatively lower age to have their first child, 17.70 years and 18.18 years respectively. Educational attainment of the women makes a large difference and it helps to delay birth for their first child from illiterate to higher educated women by 6 years. It is the lowest for illiterate women (17.79 years) and increases 1 year each from illiterate to primary and primary to secondary. But it increases more than 3 years with the increase in the educational level from secondary to higher. It is obvious that higher education enlightens people toward the awareness of problems related to early childbearing.

The above discussion reveals that the region has low age at marriage, consummation as well as first birth but the factors that are effecting to determine the age are not the same for all the states. Therefore, the specific initiatives to raise the age at marriage, consummation, and first birth should be different for each state. However, all these states still have lower age at marriage and consummation than prescribed in Child Marriage Restraint Act of 1978, which has adverse effect on maternal and child health.

## *Chapter 6*

*Regression Analysis of Woman's Age at Marriage,  
Consummation and First Birth on Socio-economic  
Factors in four North-central States in India*

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## **CHAPTER 6**

### **REGRESSION ANALYSIS OF WOMAN'S AGE AT MARRIAGE, CONSUMMATION AND FIRST BIRTH ON SOCIO-ECONOMIC AND TEMPORAL FACTORS IN FOUR NORTH-CENTRAL STATES IN INDIA**

In previous chapters, we have discussed the gross differentials in woman's median age at marriage, consummation, and first birth by socio-economic factors. In this section of the analysis, one variable was examined at a time. However, many of these variables could be interrelated. For example, education may be associated with place of residence, caste, religion, standard of living, etc. As a result, gross differences observed could be on account of the specified variables or due to another variable strongly associated with it. In order to examine the net effect of individual variables the technique of multiple regression analysis was adopted. This section of study has discussed the results of multiple regression analysis. There are five regressions, one for age at marriage as a dependent variable and two models each for age at consummation and age at first birth, which are also dependent variables. Since the explanatory variables are in a categorised form, dummy variables were used (see chapter 3 for definition of variables and categories).

The overall trends show that almost all women in the study area were married by the age of 25 years (see chapter 4) but below the age of 25, many were not married and their ages at marriage are known. Therefore, the analysis was carried out only for the ever married women of the age group of 25-49 years at the time of the survey. Apart from the various socio-economic variables, respondent's year of birth has been considered as an explanatory variable to examine the temporal effect on the dependent variables.

## 6.1 WOMAN'S AGE AT MARRIAGE

There are various socio-economic factors that possibly influence age at marriage. This section of the chapter deals with the net effect of those socio-economic and temporal factors on age at marriage in Bihar, Uttar Pradesh, Rajasthan and Madhya Pradesh.

In Bihar, age at marriage is influenced by socio-economic and temporal factors. Place of residence, religion, caste, educational level of the women, household standard of living as well as respondent's year of birth have significant effect on women age at marriage in the state. Age at marriage is lower in the rural areas by 0.84 year compared to women from urban areas after controlling other factors. Similarly, Non-Hindu women have higher age at marriage by 0.98 year compared to Hindu women (Table 6.1; detailed results of this and subsequent regression analyses are given in Appendix Table 1-20). Scheduled castes (0.78 year) and other backward castes (0.60 year) have lower age at marriage and Scheduled tribe (1.03 years) higher age at marriage compared to the forward castes. Age at marriage rises with the increase in the educational level in Bihar. Primary education rises age at marriage by 0.85 year. It rises further 4.11 years with higher education. It also increases with the increase in household standard of living by 0.21 year for medium and 0.89 year for higher compared from low standard of living. Surprisingly, there is very small temporal effect on the rise in women's age at marriage (0.04 year per year increase in calendar year) when all socio-economic variables are controlled.

Similarly, in Uttar Pradesh woman's age at marriage is influenced by various socio-economic factors. Place of residence, religion, castes, and educational level of the women have a significant effect on age at marriage in the state. Urban residence raises age at marriage by 1.5 years (Table 6.1). Age at marriage is higher among the Hindus by 0.89 years than the Non-Hindus but women who belong to Scheduled castes (1.43 years), Scheduled tribes (1.55 years) and other backward castes (1.58 years) are married earlier compared to forward castes. Education has a great impact on age at marriage for women, it rises sharply with the increase in educational level. It has advanced 5.12 years for the women with higher education, 2.12 years with secondary education and about one year with primary education (0.98 years) compared to women with no education. A rise to

medium standard of living does not have any significant effect on age at marriage but rise to high standard of living has significant effect, it raises the age at marriage by 0.69 year. After controlling all socio-economic factors Respondent's year of birth i.e., time has very little significant effect to raise the age at marriage and over the period and it has risen by 0.062 year per year over time. In other words, with the passage of, say, 30 years, age at marriage has risen by  $30 \times 0.062 = 1.86$  year purely due to the temporal effect.

Table 6.1

Result of Regression analysis of Woman's Age at Marriage on socio-economic variables and calendar year of birth, in four selected states, India, 1998-99

Background characteristics	States			
	Bihar	Uttar Pradesh	Rajasthan	Madhya Pradesh
<b>Place of residence</b>				
Urban (RC)				
Rural	-0.838**	-1.501**	-0.610**	-1.097**
<b>Religion</b>				
Hindu (RC)				
Non Hindu	0.977**	-0.889**	-0.328	-1.315**
<b>Caste</b>				
Others (RC)				
(Non SC/ST/OBC)				
Scheduled Caste	-0.778**	-1.426**	-0.914**	-1.050**
Scheduled Tribe	1.028**	-1.550**	0.340	0.549*
Other Backward Caste	-0.602**	-1.576**	-0.955**	-0.465**
<b>Educational level</b>				
Illiterate (RC)				
Primary	0.852**	0.976**	1.455**	1.175**
Secondary	1.542**	2.121**	3.250**	3.271**
Higher	4.111**	5.116**	6.680**	6.742**
<b>Household Standard of living</b>				
Low (RC)				
Medium	0.205*	0.000	-0.334*	-0.098
High	0.889**	0.689**	-0.054	-0.006
Respondent's year of birth	0.044**	0.062**	-0.039	0.030**
Adjusted R <sup>2</sup>	0.207	0.267	0.205	0.373
Constant	12.079	12.884	14.497	13.519
Total No. of ever married Women (Age group 25-49 years)	4776	6396	4844	4752

Note: \*\* = Significant at 1% level, \* = Significant at 5% level

RC = Reference Category

Source: Computed from NFHS-2 (1998-99) data files

The situation is totally different in Rajasthan. Place of residence plays a significant role to determine the woman's age at marriage. Women in rural areas are married 0.61 years earlier than the urban women (Table 6.1). But religion does not have any significant impact on woman's age at marriage in the state. Scheduled castes and other backward castes have significantly lower age at marriage (0.91 years and 0.96 years respectively) compared to forward castes but scheduled tribe women do not significantly differ from the others (reference category). Only medium standard of living has significant effect on it and it rises the age by 0.33 years with the increase from the low standard to medium standard of living. Educational level of the women has a great impact on the woman's age at marriage in the state and it is significant also. An increase to secondary level raises the age at marriage by more than three years (3.25 years) and increase to higher education by 6.68 years. In Rajasthan, the time factor has no significant effect on the age at marriage. Therefore, it gives a clear picture that it is not the time, which brings the change in the age at marriage in the state. There is a well-defined effect of education, which raises the woman's age at marriage.

Household standard of living does not have any significant effect on age at marriage in Madhya Pradesh (Table 6.1). Place of residence, religion, educational level, and time have significant effect on woman's age at marriage. Rural women have lower age at marriage (1.10 years) compared to urban women and women who belong to Hindu religion have higher age at marriage compared to Non Hindus (1.32 years). Caste groups don't have any definite pattern to determine the age at marriage in the state. Scheduled caste (1.05 years) and other backward castes (0.47 year) have significantly lower age at marriage than the forward caste but no significant effect has been seen for the scheduled tribe women. But education shows the maximum influence on the age at marriage. It has been observed that age at marriage is advanced more than a year for women with primary education compared to illiterate women. There are further increases in age at marriage with the increase in educational level, 3.27 years with secondary education and 6.74 years with higher educational level. Time also has small yet significant to raise the age at marriage (0.03 per year) over the period. Therefore, it seems that education is the most

important factor, which helps to raise the age at marriage, when other factors are controlled.

## 6.2 WOMAN'S AGE AT CONSUMMATION

To analyse the net effect of socio-economic factors as well as the temporal factor on woman's age at consummation, two models were adopted. It is obvious that age at marriage has an impact on age at consummation because in India, it is the custom that no consummation takes place without wed-lock. Therefore, it is important to examine how socio-economic and temporal factors are effecting age at consummation directly (Model 1) and after controlling for age at marriage (Model 2). Note that since Model 2 includes age at marriage as an explanatory variable, any effect of other variables on age at consummation is net of the effect on age at marriage, and is thus an effect on the gap between marriage and consummation (see the conceptual framework in chapter 3). As discussed earlier, the gap per se could not be measured with precision. Hence, the Model 2 is used as an indirect way to assess the influence on the gap.

In Bihar, place of residence, educational level and household standard of living have significant effect on woman's age at consummation. But religion and time (respondent's year of birth) do not have any significant effect on it. It shows that rural women have lower age at marriage (0.28 years) than urban women and age at marriage also increases with the increase in standard of living (Table 6.2). There is a steady increase in the woman's age at marriage with increase in the level of education. It is less than one year higher for a woman with primary education than an illiterate woman in the state. But there is further increase in woman's age at marriage and women with secondary education have 1.02 year and women with higher education have 3.41 years higher age at marriage compared to illiterate women. Woman's age at marriage is significantly lower for the Scheduled Caste (0.39 year) and Scheduled Tribe (0.32 year) women compared to forward caste women but other backward castes do not show any significant difference from the other (forward) castes. In model 2, after controlling age at marriage as an

**Table: 6.2**  
**Results of Regression Analysis of Woman's Age at Consummation on socio-economic variables and calendar year of birth, in**  
**Four selected states in India, 1998-99**

Background characteristics	States							
	Bihar		Uttar Pradesh		Rajasthan		Madhya Pradesh	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
<b>Place of residence</b>								
Urban (RC)								
Rural	-0.279*	0.255*	-0.698**	-0.176*	-2.229*	-0.037	-0.435*	0.192*
<b>Religion</b>								
Hindu (RC)								
Non Hindu	0.127	-0.496**	-0.314**	-0.003	-0.038	0.064	-0.655*	0.084
<b>Caste</b>								
Others (RC)								
(Non SC/ST/OBC)								
Scheduled Caste	-0.385*	0.111	-0.457**	0.037	-0.198	0.090	-0.436	0.158
Scheduled Tribe	0.317*	-0.338*	0.679*	-0.142	0.231*	0.123	-0.041	-0.342**
Other Backward Caste	-0.183	0.201*	-0.454**	0.092	-0.290*	0.011	-0.215*	0.046
<b>Educational level</b>								
Illiterate (RC)								
Primary	0.034*	-0.194	0.174	-0.163*	0.207	-0.248*	0.573**	-0.91
Secondary	1.0156**	0.173	1.337**	0.603**	1.423**	0.399*	2.139**	0.297*
Higher	3.412**	0.792**	4.293**	2.522**	4.512**	2.407**	5.327**	1.528**
<b>Household Standard of living</b>								
Low (RC)								
Medium	0.212*	0.081	0.113	0.112	-0.089	0.015	0.073	0.127*
High	0.511*	-0.055	0.544**	0.303**	0.015	0.032	0.141	0.144
<b>Respondent's year of birth</b>	0.006	-0.021**	0.014*	-0.003	0.003	0.003	-0.000	-0.017**
<b>Age at marriage</b>	N.A	0.638**	N.A	0.347**	N.A	0.315**	N.A	0.564**
<b>Constant</b>	15.877	8.176	15.617	11.197	16.093	11.526	16.250	8.603
<b>Adjusted R<sup>2</sup></b>	0.111	0.560	0.287	0.516	0.165	0.376	0.326	0.674
<b>Total No. of Ever married Women</b>	4776	4776	6396	6396	4844	4844	4752	4752

Note: \*\* = significant at 1% level, \* = significant at 5% level

RC = Reference Category, N.A = Not Applicable

Model 1 = Without Age at Marriage, Model 2 = With Age at Marriage as an explanatory variable

Source: Computed from NFHS-2 (1998-99) data files



explanatory variable, results show that place of residence, religion, respondent's year of birth, higher educational level of women, scheduled tribe and other backward caste membership, and age at marriage have significant effect on age at consummation in Bihar. Household standard of living, scheduled castes and primary and secondary education don't have any significant effect on it. Rural women (0.26 year) have higher age at marriage than urban women and Non-Hindu women have lower age at marriage by 0.50 years compared to Hindu women. Whereas, scheduled tribe has lower and other backward castes women has higher age at marriage compared to forward caste women. After controlling age at marriage, respondent's year of birth shows that age at consummation has declined over the year (0.02 year). Thus the gap between marriage and consummation declined over time. Only women with higher education have significantly higher age at marriage (0.80 years) than illiterate women. This shows that higher level of education raises age at consummation even after age at marriage is controlled.

Place of residence, religion, caste, respondent's year of birth, high standard of living, women with secondary and higher education have significant effect on woman's age at consummation in Uttar Pradesh (Table 6.2). Model 1 shows age at consummation is lower in the rural areas than urban areas, among non Hindus compared to Hindus and higher for the women with high standard of living compared to low standard of living by less than one year in the state. Scheduled castes (0.46 year) and other backward castes (0.45 year) have lower age at consummation and scheduled tribe women (0.68 year) have higher age at consummation than the forward caste women. Women with secondary education and higher education are married 1.34 year and 4.30 years later than illiterate women. There is marginal increase in age consummation over the time in Uttar Pradesh (0.01 year). However, model 2 shows that many of the socio-economic factors become insignificant after controlling age at marriage as an explanatory variable. Therefore, it is clear in Uttar Pradesh castes and religion influence the age at consummation primarily via their influence on age at marriage. Place of residence, educational levels of the women, high standard of living show significant effect on age at consummation. But surprisingly, woman's age at consummation is lower for the women with primary

education (0.16 year) than the illiterate women, however, it further increases with the increase in educational level. It seems only higher education raises the age at consummation in the state, and this effect is over and above its influence on age at marriage. There seems to be no temporal effect, the calendar year of birth variable has no significant effect after controlling for age at marriage (Model 2).

In Rajasthan, religion, scheduled caste, standard of living women with primary education and respondent year of birth do not have any significant effect on woman's age at consummation (Model 1). Urban women have significantly higher age at consummation (2.23 years) than the rural women (Table 6.2). Scheduled tribe women have higher and other backward castes have lower age at consummation compared to forward castes. Only secondary and higher education shows significant effect on woman's age at consummation within the various educational levels. Women with higher education are married more than 4 years after the illiterate women in Rajasthan. But after controlling age at marriage, only education has significant effect on age at consummation in this state (Model 2). However, age at consummation is lower for the women with primary education compared to the illiterate women. It shows only higher education has an impact of raising the age at marriage and not other socio-economic factors. There is no significant effect of the time factor on age at consummation once age at marriage is included as an explanatory variable. Thus, only higher level of education seems to prolong the period between marriage and consummation. Other factors have little effect, nor has there been a significant change over time.

Place of residence, religion, educational level and membership of other backward castes have significant effect on woman's age at consummation in Madhya Pradesh. It is lower for the rural women than urban women, Non-Hindus than Hindus and women from other backward castes than forward castes by less than a year (Table 6.2). It increases with the increase in the educational level of the women. It increases 0.57 years for women with primary education, 2.14 years for secondary education and 5.33 years for higher

education compared to illiterate women. There are no significant effects of standard of living; membership of scheduled castes and scheduled tribes and woman's year of birth on woman's age at consummation. But model 2 shows that after controlling age at marriage, place of residence, Scheduled Tribes membership, medium standard of living, respondent's year of birth, secondary and higher educational have significant effect on woman's age at consummation. Rural women have higher age at consummation than the urban women, similarly women with medium standard of living has higher age at consummation. Consummation has taken place later for the women with secondary education (0.29 year) and higher education (1.53 year) compared to illiterate women. Woman's age at consummation has declined over the period. Therefore, it shows the gap between age at marriage and age consummation has become narrower over the time.

### **6.3 WOMAN'S AGE AT FIRST BIRTH**

Age at first birth is an important aspect in maternal and child health. It has been influenced by various socio-economic factors. This section of the study focuses on how socio-economic factors as well as temporal factors are interplaying to determine the woman's age at first birth. To analyse the net effect, two models were adopted. Age at consummation has been taken as an explanatory variable in model 2 to examine the net effect of socio-economic and temporal factors on age at first birth after controlling age at consummation. Age at consummation has been included instead of age at marriage in the analyses, because it is the beginning of effective marriage and gives exposure to the sexual intercourse. Women of the age group of 25-49 years with at least had one child at the time of survey were included in the analysis.

Place of residence, religion, household standard of living, membership of other backward castes and primary education do not have any significant effect on woman's age at first birth. Women with secondary level of education (0.85 year) and with higher educational level (3.06 year) have significantly higher age at first birth compared to illiterate women,

whereas, scheduled caste women have lower (0.40 year) and scheduled tribe women have higher (0.41 year) age at first birth compared to forward castes in the state. However, there is significant temporal effect on age at first birth, it has significantly declined by 0.03 years annually over the time (Table 6.3). But there is no significant effect of any socio-economic factors on age at first birth except respondent's year of birth and age at consummation (Model 2) after controlling age at consummation. The time variable has a negative coefficient. It shows again that gap between consummation and first birth is significantly lower for the younger women than the older women.

In Uttar Pradesh, Scheduled Caste membership, secondary and higher education, respondent's year of birth and high standard of living have significant effect on age at first birth (Table 6.3). It is lower for the women belonging to Scheduled Castes (0.37 year) than forward caste women and higher for the women with high standard of living (0.39 year) than women with low standard of living. Only education more than primary level shows an increase in age at first birth with the increase in the level of education. It is more than three years higher for the women with higher education than illiterate women. But respondent's year of birth shows that age at first birth is significantly lower (0.05 year) for the younger women than the older women. After controlling age at consummation (Model 2), place of residence and religion show significant effect on age at first birth and it is higher for the rural women compared to urban women and also for non-Hindus than Hindus by less than a year. Women with higher educational level have comparatively higher age at first birth than illiterate women. But age at first birth has significantly decreased with the decline in the respondent's age. It reveals that the gap between consummation and first birth has become significantly narrower over time even after controlling for age at consummation.

**Table: 6.3**  
**Results of Regression Analysis of Woman's Age at First Birth<sup>#</sup> on socio-economic variables and calendar year of birth, in Four selected states in India, 1998-99**

Background characteristics	States							
	Bihar		Uttar Pradesh		Rajasthan		Madhya Pradesh	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
<b>Place of residence</b>								
Urban (RC)								
Rural	-0.125	0.067	-0.180	0.357**	0.087	0.227*	-0.241*	0.128
<b>Religion</b>								
Hindu (RC)								
Non Hindu	-0.117	-0.148	0.118	0.367**	0.075	0.159	0.126	0.594**
<b>Caste</b>								
Others (RC)								
(Non SC/ST/OBC)								
Scheduled Caste	-0.400*	-0.032	-0.368*	-0.055	-0.073	0.058	-0.507*	-0.202
Scheduled Tribe	0.412*	0.247	-0.276	0.214	0.182	0.005	-0.779**	-0.721**
Other Backward Caste	-0.019	0.170	-0.180	0.144	-0.020	0.196	-0.244*	-0.112
<b>Educational level</b>								
Illiterate (RC)								
Primary	0.187	-0.101	0.141	0.004	0.368*	0.197	0.380*	-0.024
Secondary	0.847**	-0.096	0.885**	-0.149	1.227**	0.071	1.395**	-0.200
Higher	3.059**	0.292	3.734**	0.541*	3.864**	0.216	4.309**	0.189
<b>Household Standard of living</b>								
Low (RC)								
Medium	0.186	0.015	0.155	0.067	-0.103	-0.082	-0.043	-0.129
High	0.312	-0.125	0.389*	-0.011	-0.334*	-0.385*	0.157*	-0.026
<b>Respondent's year of birth</b>	-0.033**	-0.033**	-0.053**	-0.061**	-0.051**	-0.049**	-0.037**	-0.037**
<b>Age at Consummation</b>	N.A	0.853**	N.A	0.765**	N.A	0.821**	N.A	0.806**
<b>Constant</b>	20.645	6.789	21.788	9.613	22.001	8.589	20.566	7.568
<b>Adjusted R<sup>2</sup></b>	0.048	0.445	0.120	0.403	0.064	0.417	0.184	0.529
<b>Total No. of Ever married Women (Age group 25-49 years)</b>	4607	4607	6220	6220	4689	4689	4589	4689

Note: \*\* = significant at 1% level, \* = significant at 5% level

RC = Reference Category, N.A = Not Applicable

Model 1 = Without Age at Consummation, Model 2 = With Age at Consummation as an explanatory variable

<sup>#</sup> = Only those who have had at least one child

Source: Computed from NFHS-2 (1998-99) data files

In Rajasthan, educational level, high standard of living, and the respondent's year of birth have significant effect on woman's age first birth (Table 6.3). Age at first birth has significantly risen with the increase in the educational level. Women with higher educational level have given birth to their first child 3.86 years later than illiterate women. Women with high standard of living have earlier age at first birth than women with low standard of living. Age at first birth has declined for the younger women compared to older women. There is no significant effect of place of residence, religion and castes on age at first birth. However, after controlling age at consummation for first birth, educational level of the women also does not have any significant effect on it (Model 2). Place of residence, high standard of living and time have significant effect on it. But women with high standard of living have lower age at first birth compared to women with low standard of living. Temporal effect remains the same for model 2 as was in model 1, i. e., younger women have lower age at first birth compared to older women. It shows the gap between consummation and first birth has declined irrespectively of the effects of the other factors.

There is significant effect of place of residence, caste, woman's level of education, standard of living and respondent's year of birth on age at first birth among the women in Madhya Pradesh (Table 6.3). Rural women (0.24 years) have lower age at first birth compared to urban women and the castes groups (SC/ST/OBC) have lower age at first birth (less than a year) than the forward castes in the state (Model 1). Women with high standard of living have higher age at first birth (0.16 year) compared to women with low standard of living. Education has a well-defined effect of raising the woman's age at first birth. Women with higher education had first child more than 4 years later than illiterate women, and women with secondary education also have first child 1.40 years later than illiterate women. After controlling age at consummation as an explanatory variable, educational level of women, place of residence, standard of living and caste do not have any significant effect on age at first birth in the state (Model 2). Only Non-Hindu women have significantly higher age at first birth compared to Hindu women and scheduled tribe

women have significantly lower age at first birth than other forward castes. Age at first birth is lower for the younger women than the older women and it is significant also. In Madhya Pradesh, difference between woman's age at consummation and first birth has become narrower over the period.

#### **6.4 SUMMARY RESULTS FOR WOMAN'S AGE AT MARRIAGE, CONSUMMATION AND FIRST BIRTH**

To examine the factors effecting woman's age at marriage, consummation and first birth, a summary analysis has been carried out to study the region as a whole. Because these four states have lower age at marriage, consummation as well as age at first birth compared to other states in India. But do the same factors interplay to determine age at marriage, consummation and first birth for all the states or do they vary across the states? Therefore, this section of the chapter focuses on the north-central states all together (Table 6.4 to Table 6.6 present summary of regression analysis, only sign of significant effects is shown in the tables).

Age at marriage has increased significantly in all these states with the increase in educational level of the women. Rural women have lower age at marriage in all four states compared to urban women (Table 6.4). But religions do not have any definite pattern within the region to effect the age at marriage. Castes groups also have individual effect in each state separately; there is no universal trend in age at marriage among the caste groups in the region. Similarly, household standard of living also does not have much significant effect on age at marriage across the states. Temporal effect shows marginal rise over time in age at marriage in Bihar, Uttar Pradesh and Madhya Pradesh but in Rajasthan the change is insignificant over the time.

**Table 6.4**  
**Summary Results of Regression Analysis of Respondent's Age at Marriage in Four Selected**  
**States, NFHS-2, 1998-99**

Background characteristics	States			
	Bihar	Uttar Pradesh	Rajasthan	Madhya Pradesh
<b>Place of residence</b>				
Urban (RC)				
Rural	-	--	-	--
<b>Religion</b>				
Hindu (RC)				
Non Hindu	+	-	NS	--
<b>Caste</b>				
Others (RC)				
(Non SC/ST/OBC)				
Scheduled Caste	-	--	-	--
Scheduled Tribe	++	--	NS	+
Other Backward Caste	-	--	-	-
<b>Educational level</b>				
Illiterate (RC)				
Primary	+	+	++	++
Secondary	++	+++	+++	+++
Higher	+++	+++	+++	+++
<b>Household Standard of living</b>				
Low (RC)				
Medium	+	NS	-	NS
High	+	+	NS	NS
<b>Respondent's year of birth</b>	<b>0.044</b>	<b>0.062</b>	<b>NS</b>	<b>0.030</b>
<b>Total No. of Women</b>	<b>4776</b>	<b>6396</b>	<b>4844</b>	<b>4752</b>
<b>(Age group 25-49 years)</b>				

**Note:** + = Positive & less than 1 year, ++ = Positive & 1 to 2 years, +++ = Positive & more than 2 years  
 - = Negative & less than 1 year, -- = Negative & 1 to 2 years,  
 NS = Not Significant  
 RC = Reference Category

**Source:** Computed from NFHS-2 (1998-99) data files

Woman's age at consummation in the region is also very low and there is prevalence of child marriage as well as *Gauna* among the states across the region. Place of residence does not show any particular pattern on the age at consummation but mostly it is lower for the women from rural areas (Table 6.5). Religion also does not have overall significant effect across the states. None of Castes group show significant effect on age at consummation throughout the states in the region. Similarly, household standard of living also does not have much significant effect on it. After controlling age at marriage, most of the socio-economic factors become insignificant; therefore, it reveals that age at



**Table: 6.5**  
**Summary Results of Regression Analysis of Woman's Age at Consummation on socio-economic variables and calendar year of birth, in Four selected states in India, 1998-99**

Background characteristics	States							
	Bihar		Uttar Pradesh		Rajasthan		Madhya Pradesh	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
<b>Place of residence</b>								
Urban (RC)								
Rural	-	+	-	-	---	NS	-	+
<b>Religion</b>								
Hindu (RC)								
Non Hindu	NS	-	-	NS	NS	NS	-	NS
<b>Caste</b>								
Others (RC)								
(Non SC/ST/OBC)								
Scheduled Caste	-	NS	-	NS	NS	NS	-	NS
Scheduled Tribe	+	-	+	NS	+	NS	NS	-
Other Backward Caste	NS	-	-	NS	-	NS	-	NS
<b>Educational level</b>								
Illiterate (RC)								
Primary	+	NS	NS	-	NS	-	+	NS
Secondary	++	NS	++	+	++	+	++	+
Higher	+++	+	+++	+++	+++	+++	+++	++
<b>Household Standard of living</b>								
Low (RC)								
Medium	+	NS	NS	NS	NS	NS	NS	+
High	+	NS	+	+	NS	NS	NS	NS
Respondent's year of birth	NS	-0.021	0.014	NS	NS	NS	NS	-0.017
Age at marriage	N.A	0.638	N.A	0.347	N.A	0.315	N.A	0.564
<b>Total No. of Ever married Women (Age group 25-49 years)<sup>5</sup></b>	<b>4776</b>		<b>6396</b>		<b>4844</b>		<b>4752</b>	

Note: + = Positive & less than 1 year, ++ = Positive & 1 to 2 years, +++ = Positive & more than 2 years

- = Negative & less than 1 year, -- = Negative & 1 to 2 years, --- = Negative & more than 2 years

NS = Not Significant, RC = Reference Category, N.A = Not Applicable

Model 1 = Without Age at Marriage, Model 2 = With Age at Marriage as an explanatory variable

(<sup>5</sup>) Based on 25-49 unweighted cases

Source: Computed from NFHS-2 (1998-99) data files

**Table: 6.6**  
**Summary Results of Regression Analysis of Woman's Age at First Birth<sup>#</sup> on socio-economic variables and calendar year of birth, in Four selected states in India, 1998-99**

Background characteristics	States							
	Bihar		Uttar Pradesh		Rajasthan		Madhya Pradesh	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
<b>Place of residence</b>								
Urban (RC)								
Rural	NS	NS	NS	+	NS	+	-	NS
<b>Religion</b>								
Hindu (RC)								
Non Hindu	NS	NS	NS	+	NS	NS	NS	+
<b>Caste</b>								
Others (RC)								
(Non SC/ST/OBC)								
Scheduled Caste	-	NS	-	NS	NS	NS	-	NS
Scheduled Tribe	-	NS	NS	NS	NS	NS	-	-
Other Backward Caste	NS	NS	NS	NS	NS	+	-	NS
<b>Educational level</b>								
Illiterate (RC)								
Primary	NS	NS	NS	NS	+	NS	+	NS
Secondary	+	NS	+	NS	++	NS	++	NS
Higher	+++	NS	+++	+	+++	NS	+++	NS
<b>Household Standard of living</b>								
Low (RC)								
Medium	NS	NS	NS	NS	NS	NS	NS	NS
High	NS	NS	+	NS	-	-	+	NS
Respondent's year of birth	-0.033	-0.033	-0.053	-0.061	-0.051	-0.049	-0.037	-0.037
Age at Consummation	N.A	0.853	N.A	0.765	N.A	0.821	N.A	0.806
<b>Total No. of Ever married Women (Age group 25-49 years)<sup>5</sup></b>	<b>4607</b>		<b>6220</b>		<b>4689</b>		<b>4589</b>	

Note: : + = Positive & less than 1 year, ++ = Positive & 1 to 2 years, +++ = Positive & more than 2 years

- = Negative & less than 1 year

NS = Not Significant, N.A = Not Applicable, RC = Reference Category,

Model 1 = Without Age at Consummation, Model 2 = With Age at Consummation as an explanatory variable

<sup>5</sup> Based on 25-49 unweighted cases, <sup>#</sup> = Only those who have had at least one child

Source: Computed from NFHS-2 (1998-99) data files

consummation is indirectly effected by age at marriage in the region. But the socio-economic factors do not show much effect on the gap between marriage and consummation except for the influence of the education. Even the temporal effect also remains either insignificant or is very marginal effect across the states indicating that the gap has not changed much over time, though some narrowing is seen in Bihar and Madhya Pradesh.

Place of residence and religion do not play any significant role in most of the states in the region on woman's age at first birth. Only in Madhya Pradesh all the lower castes have lower age at first birth compared to forward castes. Medium household standard of living also shows no significant effect but Uttar Pradesh, Rajasthan and Madhya Pradesh high standard of living has some impact on woman's age at first birth (Table 6.6). After controlling age at consummation, the effect of education become insignificant in most states; only in Uttar Pradesh it remains significant for women with higher education. Therefore, it reveals that woman's educational level does not play any significant role to raise the gap between consummation and first birth. Education does raise the age at first birth, but this is primarily through on age at marriage, and to some extent on the gap between marriage and consummation, but not through the first birth interval. In all the states woman's age at first birth has declined over the time. Younger women have lower age at first birth compared to older women, which leads to poor health condition and lack of awareness on child and maternal health care and adverse effect of early child bearing.

## *Chapter 7*

*Conclusion*

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## CHAPTER 7

### CONCLUSIONS

Marriage is a social institution and it is universal in India and no sexual relation is socially approved outside the wed-lock. Therefore, reproduction occurs primarily within this social system. Generally, girls are married at a very early age in the country, which gives a very long reproductive span for childbearing and more exposure to risk of pregnancy and hence higher fertility. Lower age at marriage is seen to cause high maternal and infant mortality. Thus in order to curb fertility levels, the utmost importance should be given to raise the age at marriage as most of the maternal and infant deaths occur among the younger women due to pregnancy complication. Therefore, only when a woman is prepared biologically and mentally to bear a child, the reproduction process should be allowed to commence. Age at marriage is an important variable that leads to the sexual union. As marriage in India is generally governed by certain social norms and customs and consummation does not take place immediately after the formal marriage because of the high prevalence of child marriage, there is a different ceremony called *gauna*, which is performed later. Mostly, child marriages are occurring for the girls before they attain puberty but effective marriage has started after she reaches menarche. However, early age at formal marriage does not effect much on the reproductive health of the woman but entry to the effective marriage has impact on it. Age at marriage has increased in India over the decades. The present study has focused on the trends in woman's age at marriage, consummation, and first birth in Bihar, Uttar Pradesh, Rajasthan and Madhya Pradesh, where age at marriage is still low and the phenomenon like child marriage is still prevailing along with the factors related to the change in age at marriage, consummation, and first birth.

To focus on the trend in age at marriage, consummation, and first birth in these states, data on women of ages 15-49 years provided on related issues by National Family Health Survey-2, 1998-99 has been analysed. But as the trends depict, there is an increase in age

at marriage over the period, therefore, to examine the causes regression analysis has carried out. It is important to examine whether change in age at marriage happened due to the change in the socio-economic background of the women or is it a pure temporal factor. Education is an important social factor that may possibly influence age at marriage to increase over the time, but it is also possible that it remains the same across the educational level of the women in the society and there may be a secular rise in age at marriage due to temporal effect. It is also important to examine whether with the rise in age at formal marriage, has age at consummation risen at the same rate, because age at consummation is a more important factor from health point of view. As women enter the effective marriage system, age at first birth becomes important due to the reproductive health of the mother and child health is also associated with it. Trends in age at consummation and first birth also give the idea of prevailing nature of the health system as well as the woman's status in the society.

The trend shows that median age at marriage has increased over time in Bihar, Uttar Pradesh and in Madhya Pradesh by 1.5 to 2 years in the last thirty years. But Rajasthan has almost the same age at marriage for the younger women as was for the older cohort over the period (the change is not even a full year). It also shows that in all these states nearly 98 percent women are married by the age of 25 years and 50 percent by the age of 16 years, which depicts the wide prevalence of child marriage in the region. Age at marriage has increased for women but it is still lower than the minimum legal age at marriage, i. e., 18 years in the region, therefore, it is clear that Child Marriage Restraint Act is not being rigorously enforced. Apart from Rajasthan, proportion of women married in early ages (less than 13 year) decreased from older cohort to younger cohort in other three states, which leave us with some hope for the further decline in the proportion of younger women to enter the marriage system at an early age. But for Rajasthan, more attention should be paid to examine causes behind the stagnation of age at marriage in the state for such a long period of time.

Unlike the trend in age at marriage, which shows an increase over the time, the age at consummation does not show the same trend over the time. It increased during the past thirty years in Bihar, Uttar Pradesh and Madhya Pradesh but in Rajasthan it has not increased at all compared to other three states in the region. The age of the entry to effective marriage in those states remains constant and has increased almost 0.5 years and leads to narrow the gap between marriage and consummation. However, lower age at marriage is not harmful as long as consummation takes place at a later date. But surprisingly the median age at consummation is also lower than the minimum legal age of the marriage. Consummation before 25 years of age is nearly universal in these states; nearly 98 percent women had consummated marriage by the age of 25 years. But the proportion of women has declined in the younger cohort compared to older cohort, in respect of early age at consummation (below 16 years). However, the rate is not the same for all the states and Uttar Pradesh has the larger decline in the proportion of women, who have consummated marriage at younger age. Rajasthan and also Bihar do not show any marked decline in the proportion of women consummated marriage at early ages.

It is the childbirth, which leads to the actual fertility performance for the women. Age at first birth is important to examine the maternal and child health scenario in the state. It has been observed that age at first birth has stagnated in these states in the last three decades and moreover, there is an increase in proportion of women in younger cohort compared to older cohort at the early age of child bearing. Overall age at first birth has also decreased marginally in these states and more proportion of women, have had first birth at a very early age. It has been observed that nearly 95 percent of women have experienced at least a childbirth by the age of 25 years and more than 50 percent women have a child by age 20 years and this trend remains constant over the years in these states. It is more important that the trend shows more women in younger age group have lower age at first birth compared to older women.

The regression analysis shows the net effect of socio-economic factors on age at marriage, consummation and first birth. It is clear that age at marriage has increased over the time but question remains as to what factors have played a dominant role to raise the age at marriage. The regression analysis shows clearly that place of residence has significant effect on age at marriage and urban residence increased the age at marriage by 1 to 2 years. But religion and caste do not have any significant effect on age at marriage and also household standard of living. Educational level of the women shows a significant effect on age at marriage and it rises with the increase in the educational level. It helps to raise age at marriage by more than four years as the women move from illiterate to higher education and there is also a gradual increase in age at marriage through increase in educational level. Apart for these, there is significant temporal effect also on age at marriage and it has also shown a sustainable increase over the time. None of the socio-economic as well as temporal factors has well defined significant effect on age at consummation in the region. Education has some significant effect and it increases age at consummation only with higher educational level. But the effect of education also becomes insignificant, specially when age at marriage has been taken as an explanatory variable and there is no such significant temporal effect on it. In Rajasthan, only higher education has significant effect on age at consummation and no time effect has been seen. Age at first birth also gives the same picture but when age at consummation is controlled, there is significant effect of higher education on it. But there is significant temporal effect on age at first birth and it shows that the gap between consummation and first birth has actually declined over the time in the region.

The above discussion leads to the conclusion that, with increase in at marriage over the time, age at consummation has not increased at the same rate. Moreover, age at first birth has declined over the time, which affects a woman's health adversely. It has been also observed that education has positive effect on age at marriage but it has become insignificant on age at consummation and first birth. Higher education, that plays a significant role on age at marriage and consummation but for first birth it effects via age at consummation. In the three states Bihar, Uttar Pradesh and Madhya Pradesh, the age at



formal marriage has increased over time and the role of education has been substantial in this. On the other hand, the gap between consummation and first birth has decreased which implies that higher proportion of younger women having their first child earlier and education has not been able to effect this factor. So, perhaps it can be concluded that the gains from the increase in age marriage is lost with the decrease in gap between the age at consummation and age at first birth. Time has brought secular change in age at marriage and consummation in the three states, except Rajasthan, but age at first birth has remained the same or has declined over the time. It is necessary to examine in more details further that apart from these factors, what are the other factors, which have effected the age at marriage, consummation and first birth in the region. The case of Rajasthan deserves special attention, as the situation has not changed in the last three decades.

These four states have the major share of the total population of India with higher fertility, infant mortality and maternal mortality than most other states. The above discussion reveals that there is increase in age at marriage and consummation but decrease in age at first birth in the region. After International Conference on Population and Development (ICPD) in Cairo in 1994, focus has been shifted more on reproductive health issues and lower age at first birth is also an important factor to look upon. It has been observed that education may have effect on increase in age at marriage and consummation but not on age at first birth. Therefore, adverse effect of early consummation has declined with increase in level of education but it does not reflect on the harmful effect of the early child bearing. It is necessary to take preventive measure with more awareness on maternal and child health care to increase the age at first birth to reduce the maternal and infant mortality in the region.

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*Appendix*

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## APPENDIX

### Detailed Results of Regression Analyses

#### Appendix Tables 1 to 20

Appendix Table 1

#### DETAILED RESULTS OF REGRESSION ANALYSIS FOR AGE AT MARRIAGE IN BIHAR

Socio- eco and Demographic Variables	Reference Category	Unstandardised coefficient		Standardised coefficient	t	Sig.
		B	Std.Error	Beta		
<b>Place of Residence</b>	Urban					
Rural		-0.838	0.137	-0.085	-6.138	0.000
<b>Religion</b>	Hindu					
Non Hindu		0.977	0.112	0.118	8.708	0.000
<b>Caste</b>	Others					
SC		-0.778	0.141	-0.100	-5.505	0.000
ST		1.028	0.173	0.092	5.929	0.000
OBC		-0.602	0.113	-0.098	-5.327	0.000
<b>Educational level of women</b>	Illiterate					
Primary		0.852	0.163	-0.070	5.227	0.000
Secondary		1.542	0.139	0.085	11.106	0.000
Higher		4.111	0.255	0.240	16.137	0.000
<b>Standard of living</b>	Low					
Medium		0.205	0.093	0.032	2.215	0.027
High		0.889	0.167	0.090	5.326	0.000
<b>Respondent's Year of Birth</b>		4.365E-02	0.006	0.99	7.542	0.000
<b>Constant</b>		12.079	0.402		30.065	0.000

R = 0.457, R<sup>2</sup> = 0.209, Adjusted R<sup>2</sup> = 0.207, Std. Error of Estimate = 2.74

Note: Ever married women of age group 25-49 years

Source: Computed from NFHS-2 data file

Appendix Table 2

#### DETAILED RESULTS OF REGRESSION ANALYSIS FOR AGE AT MARRIAGE IN UTTAR PRADESH

Socio- eco and Demographic Variables	Reference Category	Unstandardised coefficient		Standardised coefficient	t	Sig.
		B	Std.Error	Beta		
<b>Place of Residence</b>	Urban					
Rural		-1.501	0.139	-0.136	-10.775	0.000
<b>Religion</b>	Hindu					
Non Hindu		-0.889	0.144	-0.070	-6.193	0.000
<b>Caste</b>	Others					
SC		-1.426	0.139	-0.121	-10.222	0.000
ST		-1.550	0.347	-0.049	-4.465	0.000
OBC		-1.576	0.122	-0.150	-12.922	0.000
<b>Educational level of women</b>	Illiterate					
Primary		0.976	0.154	0.072	6.350	0.000
Secondary		2.121	0.176	0.144	12.040	0.000
Higher		5.116	0.230	0.297	22.252	0.000
<b>Standard of living</b>	Low					
Medium		5.226E-04	0.115	0.000	0.005	0.996
High		0.689	0.177	0.059	3.904	0.000
<b>Respondent's Year of Birth</b>		6.257E-02	0.007	0.079	7.255	0.000
<b>Constant</b>		12.884	0.490		26.281	0.000

R = 0.518, R<sup>2</sup> = 0.268, Adjusted R<sup>2</sup> = 0.267, Std. Error of Estimate = 3.90

Note: Ever married women of age group 25-49 years

Source: Computed from NFHS-2 data file

**Appendix Table 3**  
**DETAILED RESULTS OF REGRESSION ANALYSIS FOR AGE AT MARRIAGE IN RAJASTHAN**

Socio- eco and Demographic Variables	Reference Category	Unstandardised coefficient		Standardised coefficient	t	Sig.
		B	Std.Error	Beta		
<b>Place of Residence</b>	Urban					
Rural		-0.610	0.151	-0.062	-4.050	0.000
<b>Religion</b>	Hindu					
Non Hindu		-0.328	0.188	-0.024	-1.745	0.081
<b>Caste</b>	Others					
SC		-0.914	0.165	-0.081	-5.552	0.000
ST		0.340	0.180	0.027	1.889	0.059
OBC		-0.955	0.144	-0.094	-6.619	0.000
<b>Educational level of women</b>	Illiterate					
Primary		1.445	0.197	0.099	7.336	0.000
Secondary		3.250	0.217	0.227	14.981	0.000
Higher		6.680	0.306	0.319	21.849	0.000
<b>Standard of living</b>	Low					
Medium		-0.334	0.138	-0.039	-2.420	0.016
High		-5.402E-02	0.188	-0.005	-0.288	0.773
<b>Respondent's Year of Birth</b>						
Constant		-3.953E-04	0.008	-0.001	-0.050	0.960
		14.497	0.545		26.586	0.000

R = 0.455, R<sup>2</sup> = 0.207, Adjusted R<sup>2</sup> = 0.205, Std. Error of Estimate = 3.80

Note: Ever married women of age group 25-49 years

Source: Computed from NFHS-2 data file

**Appendix Table 4**  
**DETAILED RESULTS OF REGRESSION ANALYSIS FOR AGE AT MARRIAGE IN MADHYA PRADESH**

Socio- eco and Demographic Variables	Reference Category	Unstandardised coefficient		Standardised coefficient	t	Sig.
		B	Std.Error	Beta		
<b>Place of Residence</b>	Urban					
Rural		-1.097	0.120	-0.123	-9.114	0.000
<b>Religion</b>	Hindu					
Non Hindu		-1.315	0.170	-0.093	-7.737	0.000
<b>Caste</b>	Others					
SC		-1.050	0.167	-0.092	-6.277	0.000
ST		0.549	0.159	0.053	3.441	0.001
OBC		-0.465	0.127	-0.057	-3.653	0.000
<b>Educational level of women</b>	Illiterate					
Primary		1.175	0.131	0.110	8.967	0.000
Secondary		3.271	0.183	0.232	17.827	0.000
Higher		6.742	0.208	0.477	32.399	0.000
<b>Standard of living</b>	Low					
Medium		-9.807E-02	0.111	0.012	-0.883	0.378
High		-6.096E-03	0.162	-0.001	-0.038	0.970
<b>Respondent's Year of Birth</b>						
Constant		3.082E-02	0.007	0.052	4.479	0.000
		13.519	0.475		28.437	0.000

R = 0.612, R<sup>2</sup> = 0.375, Adjusted R<sup>2</sup> = 0.373, Std. Error of Estimate = 3.20

Note: Ever married women of age group 25-49 years

Source: Computed from NFHS-2 data file



Appendix Table 5

## DETAILED RESULTS OF REGRESSION ANALYSIS FOR AGE AT CONSUMMATION IN BIHAR

## MODEL 1

Socio- eco and Demographic Variables	Reference Category	Unstandardised coefficient		Standardised coefficient	t	Sig.
		B	Std.Error	Beta		
<b>Place of Residence</b>	Urban					
Rural		-0.279	0.122	-0.033	-2.279	0.023
<b>Religion</b>	Hindu					
Non Hindu		0.127	0.101	0.018	1.257	0.209
<b>Caste</b>	Others					
SC		-0.385	0.127	-0.059	-3.038	0.002
ST		0.317	0.156	0.033	2.039	0.041
OBC		-0.183	0.101	-0.035	-1.808	0.071
<b>Educational level of women</b>	Illiterate					
Primary		0.034	0.146	0.034	0.385	0.017
Secondary		1.156	0.125	0.147	9.283	0.000
Higher		3.412	0.229	0.235	14.933	0.000
<b>Standard of living</b>	Low					
Medium		0.212	0.083	0.039	2.548	0.011
High		0.511	0.150	0.061	3.413	0.001
<b>Respondent's Year of Birth</b>		6.370E-03	0.005	0.017	1.227	0.220
<b>Constant</b>		15.877	0.360		44.053	0.000

R = 0.336, R<sup>2</sup> = 0.113, Adjusted R<sup>2</sup> = 0.111, Std. Error of Estimate = 2.46

Note: Ever married women of age group 25-49 years

Source: Computed from NFHS-2 data file

Appendix Table 6

## DETAILED RESULTS OF REGRESSION ANALYSIS FOR AGE AT CONSUMMATION IN UTTAR PRADESH

## MODEL 1

Socio- eco and Demographic Variables	Reference Category	Unstandardised coefficient		Standardised coefficient	t	Sig.
		B	Std.Error	Beta		
<b>Place of Residence</b>	Urban					
Rural		-0.698	0.085	-0.102	-8.196	0.000
<b>Religion</b>	Hindu					
Non Hindu		-0.374	0.088	-0.040	-3.504	0.000
<b>Caste</b>	Others					
SC		-0.457	0.085	-0.063	-5.359	0.000
ST		0.679	0.212	-0.034	-3.199	2.001
OBC		-0.454	0.075	-0.075	-6.090	0.000
<b>Educational level of women</b>	Illiterate					
Primary		0.174	0.094	0.021	1.856	0.063
Secondary		1.337	0.108	0.146	12.412	0.000
Higher		4.293	0.141	0.403	30.549	0.000
<b>Standard of living</b>	Low					
Medium		0.113	0.070	0.020	1.600	0.110
High		0.544	0.108	0.075	5.045	0.000
<b>Respondent's Year of Birth</b>		10438E-02	0.004	0.036	3.348	0.001
<b>Constant</b>		15.617	0.300		52.310	0.000

R = 0.536, R<sup>2</sup> = 0.288, Adjusted R<sup>2</sup> = 0.287, Std. Error of Estimate = 2.39

Note: Ever married women of age group 25-49 years

Source: Computed from NFHS-2 data file

Appendix Table 7

## DETAILED RESULTS OF REGRESSION ANALYSIS FOR AGE AT CONSUMMATION IN RAJASTHAN

## MODEL 1

Socio-eco and Demographic Variables	Reference Category	Unstandardised coefficient		Standardised coefficient	t	Sig.
		B	Std.Error	Beta		
<b>Place of Residence</b>	Urban					
Rural		-2.229	0.094	-0.038	-2.430	0.015
<b>Religion</b>	Hindu					
Non Hindu		-3.89E-02	0.118	-0.005	-0.330	0.742
<b>Caste</b>	Others					
SC		-0.198	0.103	-0.029	-1.918	0.055
ST		0.231	0.113	0.030	2.045	0.041
OBC		-0.290	0.090	-0.047	-3.206	0.001
<b>Educational level of women</b>	Illiterate					
Primary		0.207	0.123	0.023	1.679	0.093
Secondary		1.423	0.136	0.162	10.469	0.000
Higher		4.512	0.192	0.353	23.550	0.000
<b>Standard of living</b>	Low					
Medium		-8.97E-02	0.086	-0.017	-1.038	0.299
High		1.556E-02	0.118	0.003	0.132	0.895
<b>Respondent's Year of Birth</b>		3.101E-03	0.005	0.008	0.627	0.531
<b>Constant</b>		16.093	0.342		47.098	0.000

R = 0.409, R<sup>2</sup> = 0.167, Adjusted R<sup>2</sup> = 0.165, Std. Error of Estimate = 2.38

Note: Ever married women of age group 25-49 years

Source: Computed from NFHS-2 data file

Appendix Table 8

## DETAILED RESULTS OF REGRESSION ANALYSIS FOR AGE AT CONSUMMATION IN MADHYA PRADESH

## MODEL 1

Socio-eco and Demographic Variables	Reference Category	Unstandardised coefficient		Standardised coefficient	t	Sig.
		B	Std.Error	Beta		
<b>Place of Residence</b>	Urban					
Rural		-0.435	0.094	-0.065	-4.606	0.000
<b>Religion</b>	Hindu					
Non Hindu		-0.655	0.133	-0.061	-4.908	0.000
<b>Caste</b>	Others					
SC		-0.436	0.131	-0.050	-3.321	0.001
ST		-4.10E-02	0.125	-0.005	-0.328	0.743
OBC		-0.215	0.100	-0.035	-2.154	0.031
<b>Educational level of women</b>	Illiterate					
Primary		0.573	0.103	0.071	5.568	0.000
Secondary		2.139	0.144	0.201	14.852	0.000
Higher		5.327	0.163	0.497	32.623	0.000
<b>Standard of living</b>	Low					
Medium		7.362E-02	0.087	0.012	0.845	0.398
High		0.141	0.127	0.019	1.111	0.267
<b>Respondent's Year of Birth</b>		-5.93E-04	0.005	-0.001	-0.110	0.912
<b>Constant</b>		16.250	0.373		43.596	0.000

R = 0.573, R<sup>2</sup> = 0.328, Adjusted R<sup>2</sup> = 0.326, Std. Error of Estimate = 2.51

Note: Ever married women of age group 25-49 years

Source: Computed from NFHS-2 data file

Appendix Table 9

## DETAILED RESULTS OF REGRESSION ANALYSIS FOR AGE AT CONSUMMATION IN BIHAR

## MODEL 2

Socio- eco and Demographic Variables	Reference Category	Unstandardised coefficient		Standardised coefficient	t	Sig.
		B	Std.Error	Beta		
<b>Place of Residence</b>	Urban					
Rural		0.255	0.087	0.031	2.950	0.003
<b>Religion</b>	Hindu					
Non Hindu		-0.496	0.071	-0.071	-6.954	0.000
<b>Caste</b>	Others					
SC		0.111	0.090	0.017	1.240	0.215
ST		-0.338	0.110	-0.036	-3.078	0.002
OBC		0.201	0.072	0.038	0.806	0.005
<b>Educational level of women</b>	Illiterate					
Primary		-0.194	0.103	-0.019	-1.878	0.060
Secondary		0.173	0.089	0.022	1.951	0.051
Higher		0.792	0.165	0.055	4.794	0.000
<b>Standard of living</b>	Low					
Medium		8.110E-02	0.059	0.015	1.386	0.166
High		-5.571E-02	0.106	-0.007	-0.527	0.598
<b>Respondent's Year of Birth</b>						
Age at Marriage		-2.146E-02	0.004	-0.057	-5.840	0.000
Constant		0.638	0.009	0.753	69.702	0.000
Constant		8.176	0.277		29.555	0.000

R = 0.749, R<sup>2</sup> = 0.561, Adjusted R<sup>2</sup> = 0.560, Std. Error of Estimate = 1.73

Note: Ever married women of age group 25-49 years

Source: Computed from NFHS-2 data file

Appendix Table 10

## DETAILED RESULTS OF REGRESSION ANALYSIS FOR AGE AT CONSUMMATION IN UTTAR PRADESH

## MODEL 2

Socio- eco and Demographic Variables	Reference Category	Unstandardised coefficient		Standardised coefficient	t	Sig.
		B	Std.Error	Beta		
<b>Place of Residence</b>	Urban					
Rural		-0.176	0.071	-0.026	-2.493	0.013
<b>Religion</b>	Hindu					
Non Hindu		-3.704E-03	0.073	0.000	-0.051	0.959
<b>Caste</b>	Others					
SC		3.748E-02	0.071	0.005	0.529	0.597
ST		-0.142	0.175	-0.007	-0.808	0.419
OBC		9252E-02	0.062	0.014	1.487	0.137
<b>Educational level of women</b>	Illiterate					
Primary		-0.163	0.078	-0.019	-2.100	0.036
Secondary		0.603	0.090	0.066	6.718	0.000
Higher		2.522	0.120	0.237	20.982	0.000
<b>Standard of living</b>	Low					
Medium		0.112	0.058	0.020	1.940	0.052
High		0.303	0.089	0.042	3.406	0.001
<b>Respondent's Year of Birth</b>						
Age at Marriage		-3.324E-03	0.004	-0.008	-0.907	0.364
Constant		0.347	0.006	0.559	54.995	0.000

R = 0.719, R<sup>2</sup> = 0.517, Adjusted R<sup>2</sup> = 0.516, Std. Error of Estimate = 1.97

Note: Ever married women of age group 25-49 years

Source: Computed from NFHS-2 data file

Appendix Table 11

## DETAILED RESULTS OF REGRESSION ANALYSIS FOR AGE AT CONSUMMATION IN RAJASTHAN

## MODEL 2

Socio- eco and Demographic Variables	Reference Category	Unstandardised coefficient		Standardised coefficient	t	Sig.
		B	Std.Error	Beta		
<b>Place of Residence</b>	Urban					
Rural		-3.716E-02	0.082	-0.006	-0.454	0.650
<b>Religion</b>	Hindu					
Non Hindu		6.454E-02	0.102	0.008	0.633	0.527
<b>Caste</b>	Others					
SC		9.006E-02	0.089	0.013	1.007	0.314
ST		0.123	0.098	0.016	1.266	0.206
OBC		1.107E-02	0.082	-0.006	-0.454	0.650
<b>Educational level of women</b>	Illiterate					
Primary		-0.248	0.107	-0.028	-2.312	0.021
Secondary		0.399	0.120	0.046	3.321	0.001
Higher		2.407	0.174	0.188	13.865	0.000
<b>Standard of living</b>	Low					
Medium		1.543E-02	0.075	0.003	0.207	0.836
High		3.258E-02	0.102	0.005	0.320	0.749
<b>Respondent's Year of Birth</b>		3.225E-03	0.004	0.009	0.754	0.451
<b>Age at marriage</b>		0.315	0.008	0.515	40.429	0.000
<b>Constant</b>		11.526	0.316		36.443	0.000

R = 0.614, R<sup>2</sup> = 0.378, Adjusted R<sup>2</sup> = 0.376, Std. Error of Estimate = 2.06

Note: Ever married women of age group 25-49 years

Source: Computed from NFHS-2 data file

Appendix Table 12

## DETAILED RESULTS OF REGRESSION ANALYSIS FOR AGE AT CONSUMMATION IN MADHYA PRADESH

## MODEL 2

Socio- eco and Demographic Variables	Reference Category	Unstandardised coefficient		Standardised coefficient	t	Sig.
		B	Std.Error	Beta		
<b>Place of Residence</b>	Urban					
Rural		0.192	0.066	0.029	2.899	0.004
<b>Religion</b>	Hindu					
Non Hindu		8.140E-02	0.093	0.008	0.900	0.368
<b>Caste</b>	Others					
SC		0.158	0.092	0.018	1.724	0.085
ST		-0.342	0.087	-0.044	-3.927	0.000
OBC		4.643E-02	0.070	0.007	0.667	0.505
<b>Educational level of women</b>	Illiterate					
Primary		-9.137E-02	0.072	-0.011	-1.266	0.206
Secondary		0.297	0.104	0.028	2.871	0.004
Higher		1.528	0.126	0.143	12.163	0.000
<b>Standard of living</b>	Low					
Medium		0.127	0.061	0.021	2.101	0.036
High		0.144	0.088	0.019	1.624	0.104
<b>Respondent's Year of Birth</b>		-1.776E-02	0.004	-0.040	-4.716	0.000
<b>Age at Marriage</b>		0.564	0.008	0.745	71.082	0.000
<b>Constant</b>		8.603	0.281		30.625	0.000

R = 0.822, R<sup>2</sup> = 0.675, Adjusted R<sup>2</sup> = 0.674, Std. Error of Estimate = 1.74

Note: Ever married women of age group 25-49 years

Source: Computed from NFHS-2 data file

Appendix Table 13

## DETAILED RESULTS OF REGRESSION ANALYSIS FOR AGE AT FIRST BIRTH\* IN BIHAR

## MODEL 1

Socio- eco and Demographic Variables	Reference Category	Unstandardised coefficient		Standardised coefficient	t	Sig.
		B	Std.Error	Beta		
<b>Place of Residence</b>	Urban					
Rural		-0.125	0.160	-0.012	-0.782	0.434
<b>Religion</b>	Hindu					
Non Hindu		-0.117	0.132	-0.013	-0.885	0.376
<b>Caste</b>	Others					
SC		-0.400	0.166	-0.049	-2.412	0.016
ST		0.412	0.204	0.035	2.019	0.044
OBC		-1.99E-02	0.132	-0.003	-0.151	0.880
<b>Educational level of women</b>	Illiterate					
Primary		0.187	0.191	0.015	0.979	0.328
Secondary		0.847	0.163	0.087	5.188	0.000
Higher		3.059	0.303	0.167	10.080	0.000
<b>Standard of living</b>	Low					
Medium		0.186	0.109	0.028	1.711	0.087
High		0.312	0.196	0.030	1.592	0.111
<b>Respondent's Year of Birth</b>						
Constant		20.645	0.471	-0.071	43.874	0.000

R = 0.225, R<sup>2</sup> = 0.051, Adjusted R<sup>2</sup> = 0.048, Std. Error of Estimate = 3.16

Note: Ever married women of age group 25-49 years

\*Only those who have at least one child

Source: Computed from NFHS-2 data file

Appendix Table 14

## DETAILED RESULTS OF REGRESSION ANALYSIS FOR AGE AT FIRST BIRTH\* IN UTTAR PRADESH

## MODEL 1

Socio- eco and Demographic Variables	Reference Category	Unstandardised coefficient		Standardised coefficient	t	Sig.
		B	Std.Error	Beta		
<b>Place of Residence</b>	Urban					
Rural		-0.180	0.113	-0.22	-1.592	0.111
<b>Religion</b>	Hindu					
Non Hindu		0.118	0.116	0.013	1.012	0.311
<b>Caste</b>	Others					
SC		-0.368	0.113	-0.043	-3.246	0.001
ST		-0.276	0.282	-0.012	-0.978	0.328
OBC		-0.180	0.098	-0.024	-1.825	0.068
<b>Educational level of women</b>	Illiterate					
Primary		0.141	0.125	0.014	1.130	0.259
Secondary		0.885	0.143	0.082	6.203	0.000
Higher		3.734	0.188	0.294	19.876	0.000
<b>Standard of living</b>	Low					
Medium		0.155	0.093	0.023	1.666	0.096
High		0.389	0.143	0.045	2.717	0.007
<b>Respondent's Year of Birth</b>						
Constant		-5.33E-02	0.006	-0.110	-9.044	0.000
		21.788	0.398		54.695	0.000

R = 0.349, R<sup>2</sup> = 0.122, Adjusted R<sup>2</sup> = 0.120, Std. Error of Estimate = 3.12

Note: Ever married women of age group 25-49 years

\*Only those who have at least one child

Source: Computed from NFHS-2 data file

Appendix Table 15

## DETAILED RESULTS OF REGRESSION ANALYSIS FOR AGE AT FIRST BIRTH\* IN RAJASTHAN

## MODEL 1

Socio- eco and Demographic Variables	Reference Category	Unstandardised coefficient		Standardised coefficient	t	Sig.
		B	Std.Error	Beta		
<b>Place of Residence</b>	Urban					
Rural		8.746E-02	0.125	0.012	0.698	0.485
<b>Religion</b>	Hindu					
Non Hindu		7.565E-02	0.156	0.007	0.485	0.628
<b>Caste</b>	Others					
SC		-7.38E-02	0.137	-0.009	-0.540	0.589
ST		0.182	0.150	0.019	1.212	0.226
OBC		-2.06E-02	0.120	-0.003	-0.172	0.864
<b>Educational level of women</b>	Illiterate					
Primary		0.368	0.163	0.34	2.266	0.023
Secondary		1.227	0.181	0.113	6.766	0.000
Higher		3.864	0.257	0.241	15.008	0.000
<b>Standard of living</b>	Low					
Medium		-0.103	0.115	-0.016	-0.901	0.368
High		-0.334	0.156	-0.044	-2.136	0.033
<b>Respondent's Year of Birth</b>						
Constant		-5.12E-02	0.007	-0.111	-7.795	0.000
		22.001	0.452		48.655	0.000

R = 0.257, R<sup>2</sup> = 0.066, Adjusted R<sup>2</sup> = 0.064, Std. Error of Estimate = 3.11

Note: Ever married women of age group 25-49 years

\*Only those who have at least one child

Source: Computed from NFHS-2 data file

Appendix Table 16

## DETAILED RESULTS OF REGRESSION ANALYSIS FOR AGE AT FIRST BIRTH\* IN MADHYA PRADESH

## MODEL 1

Socio- eco and Demographic Variables	Reference Category	Unstandardised coefficient		Standardised coefficient	t	Sig.
		B	Std.Error	Beta		
<b>Place of Residence</b>	Urban					
Rural		-0.241	0.116	-0.033	-2.087	0.037
<b>Religion</b>	Hindu					
Non Hindu		0.176	0.165	0.011	0.765	0.445
<b>Caste</b>	Others					
SC		-0.507	0.161	-0.054	-3.154	0.002
ST		-0.779	0.154	-0.091	-5.047	0.000
OBC		-0.244	0.123	-0.036	-1.989	0.047
<b>Educational level of women</b>	Illiterate					
Primary		0.380	0.126	0.043	3.004	0.003
Secondary		1.395	0.177	0.119	7.879	0.000
Higher		4.309	0.202	0.363	21.355	0.000
<b>Standard of living</b>	Low					
Medium		-4.34E-02	0.107	-0.006	-0.406	0.684
High		0.157	0.156	0.019	1.006	0.315
<b>Respondent's Year of Birth</b>						
Constant		-3.78E-02	0.007	-0.077	-5.714	0.000
		20.566	0.456		45.074	0.000

R = 0.431, R<sup>2</sup> = 0.186, Adjusted R<sup>2</sup> = 0.184, Std. Error of Estimate = 3.02

Note: Ever married women of age group 25-49 years

\*Only those who have at least one child

Source: Computed from NFHS-2 data file

Appendix Table 17

## DETAILED RESULTS OF REGRESSION ANALYSIS FOR AGE AT FIRST BIRTH\* IN BIHAR

## MODEL 2

Socio- eco and Demographic Variables	Reference Category	Unstandardised coefficient		Standardised coefficient	t	Sig.
		B	Std.Error	Beta		
<b>Place of Residence</b>	Urban					
Rural		6.786E-02	0.122	0.007	0.554	0.579
<b>Religion</b>	Hindu					
Non Hindu		-0.148	0.101	-0.017	-1.465	0.143
<b>Caste</b>	Others					
SC		-3.21E-02	0.127	-0.004	-0.253	0.800
ST		0.247	0.156	0.021	1.587	0.113
OBC		0.170	0.101	0.026	1.680	0.093
<b>Educational level of women</b>	Illiterate					
Primary		-0.101	0.146	-0.008	-0.695	0.0487
Secondary		-9.63E-02	0.126	-0.010	-0.766	0.444
Higher		0.292	0.237	0.016	1.235	0.217
<b>Standard of living</b>	Low					
Medium		1.596E-02	0.083	0.002	0.192	0.848
High		-0.125	0.150	-0.012	-0.838	0.402
<b>Respondent's Year of Birth</b>						
Age at Consummation		-3.32E-02	0.005	-0.072	-6.412	0.000
Constant		0.856	0.015	0.666	57.276	0.000
		6.789	0.433		15.669	0.000

R = 0.668, R<sup>2</sup> = 0.446, Adjusted R<sup>2</sup> = 0.445, Std. Error of Estimate = 2.41

Note: Ever married women of age group 25-49 years

\*Only those who have at least one child

Source: Computed from NFHS-2 data file

Appendix Table 18

## DETAILED RESULTS OF REGRESSION ANALYSIS FOR AGE AT FIRST BIRTH\* IN UTTAR PRADESH

## MODEL 2

Socio- eco and Demographic Variables	Reference Category	Unstandardised coefficient		Standardised coefficient	t	Sig.
		B	Std.Error	Beta		
<b>Place of Residence</b>	Urban					
Rural		0.357	0.094	0.000	0.042	0.000
<b>Religion</b>	Hindu					
Non Hindu		0.367	0.096	-0.006	-0.595	0.000
<b>Caste</b>	Others					
SC		-5.56E-02	0.094	0.009	0.919	0.552
ST		0.214	0.233	0.019	1.775	0.358
OBC		0.144	0.081	0.044	3.799	0.076
<b>Educational level of women</b>	Illiterate					
Primary		4.302E-03	0.103	-0.014	-1.253	0.967
Secondary		-0.149	0.119	0.043	3.266	0.210
Higher		0.541	0.116	0.010	0.877	0.001
<b>Standard of living</b>	Low					
Medium		6.742E-02	0.077	-0.001	-0.093	0.380
High		-1.10E-02	0.118	-0.126	-12.605	0.926
<b>Respondent's Year of Birth</b>						
Age at Consummation		-6.13E-02	0.005	0.628	54.175	0.000
Constant		0.765	0.014			0.000
		9.613	0.398	0.040	24.164	0.000

R = 0.636, R<sup>2</sup> = 0.404, Adjusted R<sup>2</sup> = 0.403, Std. Error of Estimate = 2.57

Note: Ever married women of age group 25-49 years

\*Only those who have at least one child

Source: Computed from NFHS-2 data file

Appendix Table 19

## DETAILED RESULTS OF REGRESSION ANALYSIS FOR AGE AT FIRST BIRTH\* IN RAJASTHAN

## MODEL 2

Socio- eco and Demographic Variables	Reference Category	Unstandardised coefficient		Standardised coefficient	t	Sig.
		B	Std.Error	Beta		
<b>Place of Residence</b>	Urban					
Rural		0.227	0.099	0.031	2.295	0.022
<b>Religion</b>	Hindu					
Non Hindu		0.159	0.123	0.015	1.288	0.198
<b>Caste</b>	Others					
SC		5.846E-02	0.108	0.007	0.542	0.588
ST		5.552E-03	0.119	0.001	0.047	0.963
OBC		0.196	0.094	0.026	2.077	0.038
<b>Educational level of women</b>	Illiterate					
Primary		0.197	0.128	0.018	1.535	0.125
Secondary		7.157E-02	0.145	0.007	0.495	0.621
Higher		0.216	0.214	0.013	1.008	0.313
<b>Standard of living</b>	Low					
Medium		-8.27E-02	0.091	-0.013	-0.912	0.362
High		-0.385	.123	-0.051	-3.125	0.002
<b>Respondent's Year of Birth</b>						
Age at Consummation		-4.96E-02	0.005	-0.108	-9.581	0.000
Constant		0.821	0.015	0.649	53.255	0.000

R = 0.647, R<sup>2</sup> = 0.419, Adjusted R<sup>2</sup> = 0.417, Std. Error of Estimate = 2.45

Note: Ever married women of age group 25-49 years

\*Only those who have at least one child

Source: Computed from NFHS-2 data file



Appendix Table 20

## DETAILED RESULTS OF REGRESSION ANALYSIS FOR AGE AT FIRST BIRTH\* IN MADHYA PRADESH

## MODEL 2

Socio- eco and Demographic Variables	Reference Category	Unstandardised coefficient		Standardised coefficient	t	Sig.
		B	Std.Error	Beta		
<b>Place of Residence</b>	Urban					
Rural		0.128	0.088	0.017	1.449	0.147
<b>Religion</b>	Hindu					
Non Hindu		0.594	0.126	0.056	4.728	0.000
<b>Caste</b>	Others					
SC		-0.202	0.122	-0.021	-1.650	0.099
ST		-0.721	0.117	-0.084	-6.151	0.000
OBC		-0.112	0.093	-0.016	-1.198	0.231
<b>Educational level of women</b>	Illiterate					
Primary		-2.40E-02	0.096	-0.003	-0.249	0.803
Secondary		-0.200	0.137	-0.017	-1.454	0.146
Higher		0.189	0.169	0.016	1.117	0.264
<b>Standard of living</b>	Low					
Medium		-0.129	0.081	-0.019	-1.588	0.112
High		-2.67E-02	0.118	-0.003	-0.226	0.821
<b>Respondent's Year of Birth</b>						
Age at Consummation		-3.74E-02	0.005	-0.077	-7.446	0.000
Constant		0.806	0.014	0.713	57.914	0.000
Constant		7.568	0.413		18.327	0.000

R = 0.728, R<sup>2</sup> = 0.530, Adjusted R<sup>2</sup> = 0.529, Std. Error of Estimate = 2.30

Note: Ever married women of age group 25-49 years

\*Only those who have at least one child

Source: Computed from NFHS-2 data file

