

AN ANALYSIS OF THE DETERMINANTS OF GIRLS CHILD MARRIAGE IN INDIA

Purnendu Modak

Ph.D Research Scholar, Department of Economics, University of Calcutta, India
Address of the workplace: University of Calcutta, 56 A, B.T. Road, Kolkata-700050

ABSTRACT

The present study analyzes the Determinants of Girls Child Marriage in India, using the District level household Survey-4 (2012-13) data on household, ever married women and villages level data in India. In this study we can find, the largest drop in the prevalence of child marriage has been observed in the under-15 marriages, while marriages in the age group 15-17 years continue to occur quite common in a number of states in India. Moreover, the Mean age of marriage for Indian women has risen steadily over the years in every state, including those where the prevalence of child marriage is quite significant, such as West Bengal, Tripura and Andhra Pradesh etc. Moreover, individual and household socioeconomic characteristics, such as place of residence, education, religion and caste are important in determining factor of child marriage (only females) in India. The present study shows that, there is a greater tendency towards child marriage among rural women, irrespective of educational and wealth differences between rural and urban women in India. From this paper, we can find the girls with secondary and higher education had much lower chances of early marriage compared to illiterate ones. Thus, education and early marriage are closely linked. However, Wealth Quintile, Village Infrastructure Quintile and household with BPL card are three crucial significant factor for child marriage in India.

Keywords: Child Marriage, Mean year of schooling, Education gap, age gap, Wealth quintile

JEL classification: *I10, I12, J15*

1. INTRODUCTION

Marriage is an important institution for the Individual and the society at large. For the Individual, it is a significant and memorable event in one's life cycle as well as the most important foundation in the family formation process. But, "Child Marriage is one of the most prevalent forms of sexual abuse and exploitation especially among the adolescent girls. It serves as a means of perpetuating power imbalances between men and women, both in the home and

outside” (Ghosh, 2011). Child marriage has seriously affected Sustainable Development Goals and Millennium development Goals in under developed countries, including India. According to Wodon et.al, (2017), child marriage has five domains of impacts on adolescent girls: (i) fertility and population growth; (ii) health, nutrition, and violence; (iii) educational attainment; (iv) labor force participation, earnings, and productivity; and (v) decision-making and other areas.

According to demographic and health survey (DHS), child marriage is most common in the world’s poorest countries. The highest rates are in sub- Saharan Africa, south Asia, also parts of Latin America. More than half of all child marriages occur in the south Asian countries of India, Pakistan, Bangladesh and Nepal (ICRW2006,2012, NRC/IOM 2005). According to the “Prohibition of Indian child marriage act 2006, child marriage today is defined as one where the girls and boys who were married below the age of 18 and 21.The UNICEF’S “state of the world’s children 2009” Report state that, India has the 12th highest rate of child marriage in the world. About 40 percent of the world’s child marriage occurs in India. Similarly, 47 percent of Indian women and 56 percent of rural women aged 20-24 year married below the age of 18. Child Marriage is a serious problem in India. It is far more serious in West Bengal, Bihar, Rajasthan, Tripura and Andhra Pradesh etc. According to National Family Health Survey (NFHS)-4 (2015-16) report, the percentage of women aged 20-24 years married before the age of 18 years was 26.8 percent (31.5 percent in rural areas, and 17.5 percent in urban areas) in India. The state of West Bengal (40.7 percent), Bihar (39.1 percent), Rajasthan (35.4 percent) Andhra Pradesh (32.7 percent), Tripura (32.2 percent) and Madhya Pradesh (30.0 percent) are areas with the highest incidence of child marriage in India.

Table 1: Percentage of child marriage in India

Prevalence of child marriage	Census 2011 Percentage of girls married <18 years (Ever- married women)	DLHS-4 (2012- 13) Currently Married women aged 20-24 years married before age of 18	NFHS-4 (2015-16) Currently Married women aged 20-24 years married before age of 18
India	31.88	27.06	26.8

Source: Author Own calculation. All figure are in percentage

In this paper, I have made a detailed study about the determinants of girls child marriage in India. This paper is divided into six sections. The next section of the paper provides a brief discussion on the literature related to the reasons behind child marriage. The objectives of the study are spelled out in the following section. Section-four discusses the data and methodology. Section-five analyzes the relation between child marriage and other socio-economic factors and Section-six attempts to estimate the determinants of girls child marriage in India .Finally, Section seven concludes and provides a brief policy suggestions.

2. REVIEW OF LITERATURE

Child marriage is one of the key factors which hinders development in many state in India. It makes a large section of the women are vulnerable. Below we represent some of the literature highlighting the extent of reasons behind child Marriage among the adolescents girls.

Mir Nayan (2015) pointed out that, Poverty is one of the main determinants of early marriage. The poor parents think of girls as an economic burden for families. They try to marry their daughters at the early age to reduce family expense and to minimize the cost of marriages.

Child marriage is still prevalent in India due to lack of education, enlightenment and awareness among the people (Mir Nayan, 2015). ICRW (2012) observed that girls with higher educational attainment will tend to postpone their marriage, in order to improve their chances of better economic livelihood and independence.

Srinivasan et al (2015), observed in highly patriarchal societies, the husband's educational attainment is likely to matter as much as the wife's. Men from lower educational attainment have greater chances of having younger wives, who are performing more on traditional female roles. We, therefore, postulate that women with husbands with fewer years of schooling will have married earlier than are those with husbands with more years of schooling.

Srinivasan et, al (2015) also pointed out that some religious communities tend to emphasize more on child marriage among females because of traditional customs that prevail in the communities. He further observed that, women from socioeconomically underprivileged communities, namely Scheduled Castes (SC) and Scheduled Tribes (ST), are more likely than those from other castes to marry at an early age because off cultural reasons.

Research shows that there is a strong association between age gap and women married at an early age (ICRW.2008b). Age gap is regarded as a measure of equity between a woman and her partner. A smaller age gap indicates a higher status level for women (Amin and Cain 1997). Girls with much older husbands are less able to negotiate or make household decisions due to their lower status, which is a result of their younger age (NRC/IOM 2005). This lower status, in turn, increases the likelihood that they will experience domestic violence and abuse (Kishor and Johnson 2004).

3. OBJECTIVE OF THE STUDY

This paper is planned to attain the following objectives:

- 1) Using DLHS-4 unit level data, I have attempted to find the determinants of girls child marriage in India.

- 2) To analyze the various socio-economic and cultural factors leading to girls child marriage in India.
- 3) In this study, I have tried to investigate if any relationship exist between the village Infrastructural development and the girls child marriage in India.

4. DATA AND METHODOLOGY

4.1 Data

In this study, DLHS-4 (2012-13) unit level data is used as our main data source. I have used unit level household data, ever-married women data and village level data to identify the determinants of girls child marriage in India.

4.2 Methodology

To get an idea about the determining factors behind the incidence of girl child marriage in India. I have used a Logit model because my dependent variable is the dummy *dependent variable which takes the value 1 if a woman had married below 18 and 0 otherwise*. The age of marriage of a woman is given in the data for ever-married women in the DLHS-4 data.

Three models of regression have been used to estimate the determinants of girls child marriage in India. In the first Logit model to explain whether a girl marriage before eighteen or not

$$P(y = 1 | x) = G(\alpha + \beta X + \mu H + \gamma Z) \quad (1)$$

Where, P is the probability of a girl marrying before 18 and X is the vector of dummies for the woman's educational qualification (the educational dummies being primary, middle and higher education with illiterate as the reference category). Similarly, H is the vector of dummies for husband's educational qualification (the educational dummies being primary, middle and higher education with illiterate as the reference category). Another point Z is the vector of household Characteristics (Religion, locality, caste, & wealth Quintile) and other women Characteristics (Age gap & occupation). β , μ , γ is the vectors of parameters associated with X, H and Z respectively and α is the intercept. The wealth quintile of a household is calculated from the data on household assets using Principal Component Analysis.

In the second model, the wealth quintile is substituted with some vital household characteristics like whether the household have a BPL card (or not), whether firewood is used as a fuel (or not), the structure of the house (Pucca or not), Source of Lighting, Types of Toilet and Drinking Water in the household. This is done to isolate, these very important characteristics which would go unnoticed if the wealth quintile is taken as a whole. The second model is thus specified as,

$$P(y = 1 | x) = G(\alpha + \beta X + \mu H + \gamma Z') \tag{2}$$

Where Z' is the new vector of household characteristics and rest are as in Model-2.

In the third model, we are incorporating village characteristics in addition to the educational dummies and household characteristics. The village characteristics are given in the village level data of the DLHS-4 and it has been merged with the ever married women data to link every woman to the characteristics of her village. Thus the third model is written as,

$$P(y = 1 | x) = G(\alpha + \beta X + \mu H + \theta V + \gamma Z) \tag{3}$$

Here V is the vector of village Characteristics (i.e., village infrastructure quintile, Natural disaster, principle occupation in the village, village with Mahila Mandal & SHG, Village with employment scheme and other scheme facility) and θ is the vectors of parameters associated with it. The rest of the variables are as described in Model-1. The village infrastructure quintile has been calculated from the village level data of the DLHS-4.

5. RESULTS

Socio- Economic Factors and Child Marriage prevalence

Needless to say that child marriage is a serious problem in India. There is no doubt that it affects India's socio-economic development. Here, we have examined the socio- economic and demographic characteristics of female such as place of residence, educational attainment, the husband's educational attainment, age gap, education gap, religion, caste and household wealth status. All these variables highly influence the age of marriage among women who are married below the age of eighteen.

Table 2: Mean age at marriage and percentage of marriages below legally prescribed minimum age at marriage by sex, residence and state in India

Place of residence /state	DLHS-4 data		DLHS-4 data		DLHS-3 data		DLHS-3 data		DLHS-4	DLHS-3	Change
	Mean age at marriage		Percentage of marriages below legal age at marriage		Mean age at marriage		Percentage of marriages below legal age at marriage		currently married women aged 20-24 married before 18	currently married women aged 20-24 married before 18	
	Men	women	Men less than 21 year	women less than 18 year	Men	women	Men Less than 21 year	women less than 18 year			
Andaman &	24.9	21.1	3.8	7.8	26	21.6	5.2	6	19.64	24.5	4.86

Nicobar												
Andhra Pradesh	24.3	19.8	14.7	15.9	24	19	19.5	28.6	33.47	51.9	18.4	
Arunachal Pradesh	24.5	21.3	18.3	13	25	21.7	14.5	8.2	36.1	26.2	-9.9	
Chandigarh	25.3	22.5	11.5	1.9	25	23.2	12.1	3.3	14.29	21.8	7.51	
Goa	29.6	25.3	1.7	0	30	25.1	2.7	3	21.7	19.1	-2.6	
Haryana	23.8	20.8	17.3	5.9	23	19.7	27.4	15.9	27.99	28	0.01	
Himachal Pradesh	26.2	22.3	2.9	0.5	26	21.9	6	1.6	12.8	9.1	-3.7	
Karnataka	26.4	20.5	7.2	14.1	26	19.8	11.1	22.4	33.11	50.2	17.1	
Kerala	28.2	22.6	1	2.8	28	22.1	1.2	6.8	9.7	15.5	5.8	
Maharashtra	25.1	20.1	9.3	12	24	19.3	12.4	17.6	30.87	40.4	9.53	
Manipur	26.7	24	9.5	7	27	23.6	8.6	6.3	22.36	24.7	2.34	
Meghalaya	27.1	23.4	12.2	5.7	24	21.1	27.7	15	22.96	34.3	11.34	
Mizoram	26.1	23.1	13.5	6	25	21.7	20.9	9.9	27.55	23.7	-3.9	
Nagaland	27.1	24.6	2.6	6					22.58			
Puducherry	28.2	22.8	3.3	4.9	28	22.5	3.5	3.6	15.95	17.4	1.45	
Punjab	24.6	21.9	11.7	3.9	24	21.3	15.5	5.8	16.51	15.5	-1	
Sikkim	24.6	22.8	15.5	8.3	25	21.5	21.1	16	35.83	30.6	-5.2	
Tamil Nadu	27	22	3.6	5.3	27	21.3	4.8	9.1	14.35	24	9.65	
Telangana	24	19.8	11.8	10.7					27.35			
Tripura	26.2	20.9	13.5	18.9	26	20.2	16.5	21.1	43.44	43.6	0.16	
West Bengal	25.4	19.2	15.8	31.6	25	18.5	21.7	41.3	48.85	54.7	5.85	
Rural Area	25.6	21.94	11.7	10.15	23	19.2	28.4	26.9	29.83	48		
Urban Area	26.6	22.7	6.21	5.62	26	21.2	12.6	11	24.29	29.4		
DLHS-4	26	21.9	20.7	18.22					27.06			
DLHS-3					24	20.2	23.4	22.1		38.7		

Source: Author own calculation from DLHS -4(2012-13) and DLHS-3(2007-08) data.

Table-2 shows the mean age at marriage of women (men) and percentage of women (men) getting married below the legal age at marriage in India. In DLHS-4 data, the mean age at marriage for women is among the highest in Goa (25.3 years) and lowest in west Bengal (19.2 years). For men, the mean age at marriage is higher than women. The mean age at first marriage among women varies widely across the states exhibiting a range of 6 years between Goa (25.3 years) and West Bengal (19.2 years). The highest proportion of marriage is below the legal age for women in west Bengal (31.6 percent). Here, In this table, the high prevalence state in term of child marriage in West Bengal(31.6 percent), Tripura(18.9 percent) and Andhra Pradesh(15.9 percent). The prevalence of child marriage is declining as seen by comparing DLHS-4 with

DLHS-3 data. On comparing between DLHS-3 to DLHS-4, it has been found out that, the overall percentage change in child marriage (among men & women) has not been uniformly declined in all state in India.

It has been observed that child marriage has mostly occurred among the higher age gap between the bride and groom.. Here I have tried to see whether such a pattern can be observed in the DLHS-4 data. In **Table -3**, I have examined the age at marriage and Age gap in India. We have taken four categories of Age gap: **(i)** when the Age of the wife is greater than her husband (in this case the Age gap is less than zero) **(ii)** when the Age of the husband is greater than her wife (in this case the Age gap is zero to three year) **(iii)** when the Age gap of the husband is much more greater than that of the wife (in this case the Age gap is four to six year) **(iv)** the Age of the husband is far greater than that of the wife (in this case the age gap is more than seven years) In this table, we can find that the age gap has been declining trend in India. The age gap was much higher in the age cohort above 40 years than in the age cohort 20- 24 years. Also, the age gap is higher for the women married before eighteen is 4-6 years and above 7 years age group. Among the women above 40 years, 24.8 percent of those married before eighteen had an age gap over seven years. Though this gap has substantially decreased to 20.85 percent in age cohort 20-24 years. The gap is still slightly higher among those married below eighteen than those married above.

Table 3: Age gap and age of marriage among different age cohorts in India

Age gap category between husband and wife	Percentage of currently married women aged 20-24 years		percentage of currently married women aged 30-34 years		percentage of currently married women aged above 40 years	
	Married less than 18 years	Married more than 18 years	Married less than 18 years	Married more than 18 years	Married less than 18 years	Married more than 18 years
Age gap less than zero	0.45	0.93	0.70	1.99	0.67	1.54
Zero – three years Age gap	12.1	16.45	10.17	15.47	8.32	12.67
Four –Six years Age gap	16.76	15.95	16.68	14.12	16.1	13.22
Above seven Age gap	20.85	16.52	22.43	18.32	24.8	22.5
Total	100		100		100	

Source: Own calculation from DLHS 4 data

In **Table -4**, shows the largest drop in the prevalence of child marriage has been in the under-15 marriages in India. For examples, only 5.39 (3.72) percent of rural (urban) women from OC'S and 6.2(4.17) percent of rural (urban) women from Hindu as opposed to 5.85(4.72) percent of rural (urban) women of SC married below the age of 15.

Among under-18 marriages, marriage between the ages of 15-17 year is slightly more common among ST (25.1 percent in rural & 19.35 in urban) and Muslim (24.83 percent in rural & 19.51) percent in urban) than among OC,s (22.13 in rural & 19.62 percent in urban) and Hindu (20.97 percent in rural & 17.64 percent in urban). Here we find that child marriage has been found greater among ST and Muslim in 15-17 age group.

There is a systematic drop in the percentage of child marriage among women as level of schooling rises. About 36.7 (30.1) percent in rural (urban) women of illiterate are married below 15 year of age , while 24.4 (17.76) percent in rural(urban) women are married between 15-17 years, as opposed to only 3.07(4.16) percent and 8.55 (14.36) percent in rural (urban) respectively, of women with HS education.

Husband education play a another important role to reduce the child marriage among women in India. About 32.21(25.43) percent in rural (urban) of illiterate husband are married before 15 year of age, while 21.59(16.25) percent of rural (urban) are married between 15- 17 years, as opposed to only 9.02(11.32) and 15.07(11.18)percent in rural(urban) respectively, of husband with HS education.

To see whether poverty is linked to child marriage, we measure poverty on the basis of a household having a BPL card or not. The Below Poverty Line (BPL) cards are indicative of the economic status of any households. They are issued by the Government of India to identify poverty stricken families. In DLHS-4, about 26.61 (23.38) percent in rural (urban) women of BPL family are married between 15-17 years, as opposed to only 23.07 (19.36) percent in rural (urban) women respectively, of APL family. So, the percentage of child marriage is much higher among the BPL family showing us that poverty is linked to child marriage.

The occupation of the Head of household play a significant role in performing the child marriage. About 33.77 (31) percent in rural (urban) women respondents reported that their main occupation is labor and worker. Only 24.06 (21.13) percent in rural (urban) women respondent reported that their family occupation is Farmer, fishermen, Hunters in age group 15-17 year

A Wealth Index has been calculated from the household assets. We can see that the percentage of child marriages is higher among the poorest household as compared to in richest household in below-15 & 15-17 year age group. For example, in case of DLHS-4, between the poorest to the richest household wealth quintile, there is a systematic drop by 8 percent point among under-15

marriage. Alternatively, as the wealth quintile increases from the poorest to richest, there is an increase by 16 percent point among currently married women aged 20-24 year who were married above 18 years.

Table 4: Demographic and Socio Economic characteristics of women and age of marriage in age cohort 20- 24 in India

Demographic and socioeconomic characteristics of women		Married before 15 years		Married 15-17 years		Married at 18 Years & above	
		RURAL	URBAN	RURAL	URBAN	RURAL	URBAN
Religion	Hindu	6.2	4.17	20.97	17.64	68.83	75.2
	Muslim	7.89	2.93	24.83	19.51	61.28	72.6
caste	SC	5.85	4.72	21.32	19.68	72.83	75.6
	ST	6.22	4.56	25.1	19.35	68.68	76.1
	OBC	5.5	3.27	20.62	15.85	73.88	79.9
	OC	5.39	3.72	22.13	19.62	70.48	74.7
Highest education level of woman	Illiterate	36.7	30.1	24.4	17.76	38.9	52.2
	Primary	31.9	26.8	23.67	18.61	44.46	54.6
	Middle	19.9	25.4	24.8	25.56	55.35	49
	Secondary	7.89	11.7	18.39	23.1	73.72	65.2
	H.S & above	3.07	4.16	8.55	14.36	88.38	81.5
Highest education level of husband	Illiterate	32.2	25.4	21.59	16.25	46.2	58.3
	Primary	25.2	24.9	21.74	19.36	53.05	55.7
	Middle	20	21.1	21.82	21.81	58.19	57.1
	Secondary	11.8	16.7	18.65	22.36	69.51	61
	Higher secondary and above	9.02	11.3	15.07	11.18	75.91	77.5
Having BPL card or not	household have a BPL card	6.9	4.69	26.61	23.38	66.49	71.9
	household have a APL card	5.08	3.46	23.07	19.36	71.85	77.2
Occupation of the Head of Household	Scientist, engineers, Teacher, Doctor, Administer. Officer etc	2.31	2.02	11.11	6.48	86.58	91.5
	Clerical & related work	4.12	2.12	15.38	6.67	80.5	91.2
	Service worker (Hotel, Restaurant, House keepers etc.)	8.54	5.33	28.03	12	63.43	82.7
	Farmer, fishermen, Hunters	11.3	8.27	24.06	21.13	64.67	70.6
	Production & related worker, Labor , transport equipment operators etc.	12	8.06	33.77	31	54.27	60.8
	Others (seeking employment, house wife, student ,retired, unemployed etc)	9.88	8.02	33.45	32.36	56.67	59.6

Wealth quintile index	Poorest	11.82	9.68	32.33	28.23	55.85	62.09
	Poor	8.91	7.12	27.12	26.85	63.97	66.03
	Middle	7.45	5.99	24.23	22.23	68.32	71.78
	Rich	5.12	3.29	19.89	17.48	74.99	79.23
	Richest	3.23	1.99	14.26	12.03	82.51	85.98

Source: Own calculation from DLHS 4 data All figure are in percentage

It has been observed in earlier research that child marriages are much more prevalent in backward areas. To examine this aspect, I have constructed a village infrastructure quintile through Principal Component analysis and divided the villages into five groups according to their infrastructure, Group-1 having the least infrastructure and Group-5 having the highest. In India, we observe that proportion of below-15 and between 15 -17 marriages fall as the village infrastructure increases. For examples, 10.37 percent of the women in the villages with least infrastructure marry before-15 and another 25.3 percent marry between 15-17 years. These figures are as low as 7.74 percent and 20.8 percent in the highest infrastructure villages. (**Table-5**)

Table 5: Percentage of Currently Married women aged 20-24 years by age of Marriage below 18 years and Village Infrastructure Quintile in India.

India				
Village Development and child Marriage Prevalence		Married before 15 years	Married 15-17 years	Married at 18 year and above
Village Infrastructure Quintile	1 (Least)	10.37	25.3	64.33
	2	8.85	24.46	66.69
	3	9.22	22.88	67.9
	4	9.01	21.65	69.34
	5 (Highest)	7.74	20.8	71.46

Source: Own calculation from DLHS 4 data All figure are in percentage

Table 6: Rural (Urban) classification of mean year of schooling in different social category and age group among female (married & unmarried) candidates in India

AGE	India															
	FEMALE															
	RURAL								URBAN							
	Married				Unmarried				Married				Unmarried			
SC	ST	OBC	other	SC	ST	OBC	other	SC	ST	OBC	other	SC	ST	OBC	other	
13-17	9.3 (2.5)	8.3 (2.3)	9.9 (2.3)	9.7 (2.5)	10.4 (2.1)	9.3 (2.2)	10.7 (1.8)	10.7 (1.8)	10.1 (2.2)	9.4 (2.9)	10.8 (2.3)	9.7 (2.5)	10.6 (2.2)	10.4 (1.9)	11.2 (1.7)	11.3 (1.85)
18-24	9.5 (3.3)	8.8 (3.4)	10.2 (3.5)	10.7 (3.4)	11.9 (3.1)	11.2 (3.2)	12.8 (3.1)	13.1 (2.6)	10.4 (3.5)	10.3 (3.4)	11.4 (3.4)	11.6 (3.5)	12.9 (3.1)	12.6 (2.8)	13.7 (2.9)	14.1 (2.6)

Source: Own calculation from DLHS 4 data, within bracket-SD & without bracket-Mean

Table—6 represents the rural (urban) classification of mean year of schooling in different social caste and age group in India. In 13-17 age group, we have seen in case of in India, the *mean year of schooling for OBC is higher and for ST is lower* among female (married & unmarried) candidates in rural as well as in urban areas. which implies that early marriage is more common among ST than OBC because mean year of schooling is lower among ST. *In 13-17 age group, we can find in India, the urban female (married & unmarried) candidates mean year of schooling is higher than the rural female (married & unmarried) candidates.* Similarly, urban unmarried female candidates, mean year of schooling is higher than the rural unmarried female candidates in all category and age group. Moreover, in 13-17 age group, among the married female (rural & urban) candidates mean year of schooling is lower than the unmarried (rural & urban) female candidates in India. So, we can conclude that, education is lower among the married female candidates. Moreover, early marriage is more common in rural area than in urban area because mean year of schooling is lower in rural area.

Table 7: Rural (Urban) classification of mean year of schooling in different religion category and age group among female (married & unmarried) candidates in India

AGE	India															
	FEMALE															
	RURAL								URBAN							
	Married				Unmarried				Married				Unmarried			
	H	M	C	O	H	M	C	O	H	M	C	O	H	M	C	O
13-17	9.3 (2.4)	8.8 (2.5)	9.5 (2.8)	8.9 (1.8)	10.1 (1.9)	9.6 (2.2)	10.4 (2.1)	9.1 (2.2)	10.2 (2.4)	9.9 (2.6)	10.4 (2.2)	9.3 (2.3)	10.8 (1.7)	10.4 (2.1)	10.9 (1.8)	9.9 (2.4)
18-24	9.4 (3.3)	9.1 (3.2)	9.7 (3.4)	9.4 (3.1)	11.9 (2.9)	11.2 (3.3)	12.3 (3.1)	11.6 (2.9)	10.7 (3.5)	10.3 (3.1)	10.9 (3.3)	11.7 (3.5)	13.1 (2.8)	12.1 (3.1)	13.2 (2.7)	12.8 (2.5)

Source: Own calculation from DLHS 4 data, within bracket-SD & without bracket-Mean. H-Hindu, -Muslim, C-Christian, O-others

Table-7 represents the rural (urban) classification of mean year of schooling in different religion category and age group in India. In 13-17 age group, we have seen in India, the *mean year of schooling for Christian is higher and for Muslim is lower* among female (married & unmarried) candidates in rural as well as in urban areas. Which implies that early marriage is more common among Muslim than Christian because mean year of schooling is lower among Muslim. *In 13-17 age group, we can find, the urban female (married & unmarried) candidates mean year of schooling is higher than the rural female (married & unmarried) candidates.* Similarly, urban unmarried female candidates, mean year of schooling is higher than the rural unmarried female candidates in all category and age group. Moreover, in 13-17 age group, among the married female (rural & urban) candidates mean year of schooling is lower than the unmarried (rural & urban) female candidates in India. So, we can conclude that, education is lower among the married female candidates. Moreover, early marriage is more common in rural area than in urban area because mean year of schooling is lower in rural area.

Table 8: Relationship between Age gap & Education Gap among Currently Married women aged 20-24 years who were married before the age of 18 year in India

Education Gap \ Age Gap	Wife >> husband	Wife > husband	Wife = husband	Husband > wife	Husband >> wife	Total
Age gap less than zero	0.00	0.15	0.43	0.28	0.00	0.86
Zero – three years Age gap	0.05	4.82	10.85	9.10	0.20	25.02
Four –Six years Age gap	0.07	7.56	13.03	11.99	0.40	33.04
Above seven Age gap	0.15	9.91	15.91	14.82	0.28	41.08
Total	0.27	22.44	40.22	36.20	0.88	100

Source: Own calculation from DLHS 4 data. All figures are in percentage

As girls are getting married early, they are compelled to stop their education and remain least qualified, therefore, it would be interesting to see whether the education gap between the husband and wife is greater among women who marry early. In **Table -8**, We have taken five categories of education gap: **(i)** when the education of the wife is much greater than her husband (in this case the gap in mean years of schooling between husband and wife is greater than four years, in the table it is indicated as wife >> husband) **(ii)** when the education level of the wife is greater than her husband (the gap in the mean years of schooling between husband and wife is more than zero but less than four, in this table it is indicated as wife > husband) **(iii)** when there is no education gap between the husband and wife (in the table it is indicated as wife = husband) **(iv)** when the education of the husband is greater than that of the wife (the gap in the mean years of schooling between husband and wife is more than zero but less than four, in the table it is indicated as husband > wife) **(v)** the education of the husband is far greater than that of the wife (in this case the gap in mean years of schooling between husband and wife is greater than four years, in the table it is indicated as husband >> wife) In this table, it has been observed in many earlier research that age gap is also very high among women who marry early. **Tables - 8**, I have analyzed the age gap and education gap among women, who were married before the age of eighteen. In India, 15.91 percent of early marriages occurred among women, who are age

gap in above seven years and there was no gap in education between husband and wife, When age gap above seven years, 14.82 percent of early marriages occurred among women, whose husband are more educated than that of wife.

6. ECONOMETRIC ANALYSIS OF THE FINDING

Determinants of girls Child marriage in India

In this section, I have done logistic regressions for India and tried to estimate the factors which determine the probability of a girl getting married before the age of eighteen. Model-1 (Table-9) is a basic model which considers the woman's own education, husband's education, religion, caste, Age Gap, Locality, Respondent occupation and the wealth quintile. Its shows that, Muslims have a higher probability for the girls getting married before the age of eighteen than Hindus while the Christians have a lower probability than Hindus. Similarly, Scheduled Tribes have a higher probability of early marriage than General category, It is just the opposite for scheduled caste. The OBC s are not statistically significant. The dummies for husband's education are not significant. The probability of a girl with primary education getting married is not significantly different than that of an illiterate girl .However, probability of child marriage decreases when the girl has education up to middle or higher school. The wealth index is an indirect indicator of socioeconomic status of the women and their parents as well as their in-laws' families. Our findings revealed that, in case of India, wealth Quintile have a significantly negative association with the high prevalence of child marriage at 1% level of significant. It is likely that the women with a better economic status are less likely to be married at an early age. Because their parent are more likely preferred them to be engaged in higher education or occupational aspiration than women from poorer counterparts.

To check the validity of this result, in Model-2 (Table-9), I have substituted the wealth quintile with six important features determining the standard of living of a household. We have taken six variables to measure the standard of living for a household. For example- the family have a BPL card (or not), type of house Pucca (or not), household uses firewood as a cooking fuel (or not) , household have a electricity (or not), types of toilet and source of drinking water in the household. The interesting results is that, the household with a BPL card and using firewood as a cooking fuel have a higher probability for the girls getting married below the age of eighteen. Similarly, the household with Pucca houses have a lower probability for a girl getting married below the age of eighteen.

In Model-3 (Table-9), we have retained the wealth quintile and brought in controls for village infrastructure quintile. This is to test whether the prevalence of child marriage is higher in backward villages or not. The effect of the girl's education, husband's education, religion, caste

and wealth quintile remains unchanged from Model-1. One of the interesting result is that, the probability of child marriage falls as the village infrastructure improves. Moreover, in villages with a greater number of Mahila Mandal, self help group, child development schemes and other welfare schemes have lower probability of a girls getting married below the age of eighteen. So, our main finding is that, the village infrastructure development is very important determinant of child marriage in India.

Table 9: Determinants of girls Child marriage in India

Women age of Marriage less than 18	Model-1		Model-2		Model-3	
	India	M.E	India	M.E	India	M.E
Religion(Hindu ref)						
Muslim	0.21***	0.03	0.18***	0.03	0.23***	0.04
Christian	-0.77***	-0.11	-0.78***	-0.11	-0.71***	-0.10
other	-0.51***	-0.07	-0.57***	-0.08	-0.48***	-0.07
caste(General Ref)						
SC	-0.05**	-0.01	-0.01*	0.01	-0.01*	-0.01
ST	0.12***	0.02	0.18***	0.03	0.11***	0.01
OBC	0.00	0.01	0.03	0.01	0.02	0.01
Locality(Urban ref)						
Rural	0.20***	0.08	0.21***	0.07	0.30***	0.07
Husband education (Ref illiterate)						
Husband primary education	0.09	0.01	0.07	0.01	0.08	0.01
Husband Middle education	-0.04	-0.01	-0.08	-0.01	-0.06	-0.01
Husband Higher education	-0.06	-0.01	-0.12	-0.01	-0.08	-0.01
Women education (Ref illiterate)						
Women primary education	-0.05	-0.01	-0.06	-0.01	-0.05	-0.01
Women Middle education	-0.43***	-0.07	-0.46***	-0.07	-0.42***	-0.07
Women Higher education	-1.52***	-0.19	-1.60***	-0.20	-1.51***	-0.19
Age gap	0.06**	0.09	0.07**	0.07	0.09**	0.08
Respondent occupation (No Work Ref)						
Working	-0.13***	0.10	-0.11***	0.11	-0.12***	0.13
Wealth Quintile	-0.14***	0.11			-0.13***	0.11
Types of Fuel(Ref Firewood)			0.04**	-0.01		
Structure of House (Ref Pucca)			-0.08***	-0.01		
Household BPL card (Ref APL)			0.21***	0.07		
Source of Lighting(Electricity Ref)			0.22***	0.05		
Types of Toilet (Pit latrine Ref)			0.12**	0.01		

Source of Drinking Water(Ref Public tap)			0.19***	0.03		
Village Infrastructures Quintile					-0.03***	-0.01
Natural Disaster					0.13***	0.02
Village with Mahila Mandal					-0.04**	-0.01
Village with self help group					-0.04**	-0.01
Women & child development scheme score					-0.28***	0.04
Other welfare scheme score					-0.34***	0.05
Cons	-0.13***		0.58***		-0.36***	
No of observation	115509		125549		124842	
Pseudo R ²	0.06		0.05		0.06	

Sources- Own calculation from DLHS 4 date, M.E-Marginal effect, *** significant at 1 % level, ** significant at 5 % level , * significant at 10% level

Table 10: Determinants of girls Child marriage among two different age cohorts in India

Women age of Marriage less than 18	Model-1		Model-2		Model-3	
	20-24	30-34	20-24	30-34	20-24	30-34
Religion(Hindu ref)						
Muslim	0.06	0.20***	0.04	0.17***	0.05	0.22***
Christian	-0.35***	-0.93***	-0.41***	-0.87***	-0.30***	-0.87***
other	-0.34***	-0.62***	-0.42***	-0.64***	-0.31***	-0.57***
caste(General Ref)						
SC	-0.24***	0.07**	-0.16***	0.11***	-0.22***	0.11***
ST	0.03	0.14***	0.10*	0.19***	0.02	0.13***
OBC	-0.08**	0.04	-0.04	0.05*	-0.08*	0.06*
Locality (Urban ref)						
Rural	0.19**	0.22***	0.17**	0.20***	0.16**	0.21***
Husband education (Ref illiterate)						
Husband primary education	0.20	0.05	0.18	0.04	0.21	0.04
Husband Middle education	0.06	-0.12	0.01	-0.15	0.06	-0.14
Husband Higher education	0.02	-0.13	-0.06	-0.19	0.02	-0.16
Women education (Ref illiterate)						
Women primary education	0.00	-0.16**	-0.01	-0.24***	-0.02	-0.16**
Women Middle education	-0.25	-0.64***	-0.29	-0.74***	-0.27	-0.64***
Women Higher education	-1.22***	-1.89***	-1.30***	-2.02***	-1.23***	-1.87***
age gap	0.08*	0.10**	0.09*	0.9**	0.10*	0.9**
respondent occupation (No Work Ref)						
Working	-0.07***	-0.12**	-0.08***	- 0.11**	-0.07***	-0.9**

Wealth Quintile	-0.16***	-0.08***			-0.14***	-0.07***
Types of Fuel(Ref Firewood)			0.15***	-0.08***		
Structure of House (Ref Pucca)			-0.15***	0.03		
Household BPL card (Ref APL)			0.04	0.23***		
Source of Lighting(Electricity Ref)			0.03**	0.07**		
Types of Toilet (Pit latrine Ref)			0.11	0.05**		
Source of Drinking Water(Ref Public tap)			0.15*	0.12**		
Village Infrastructures Quintile					0.01	-0.03***
Natural Disaster					0.10***	0.14***
Village with Mahila Mandal					-0.06*	-0.02
Village with self help group					-0.02	-0.01
Women & child development scheme score					-0.19***	-0.26***
Other welfare scheme score					-0.21***	-0.42***
Cons	0.11	-0.23**	-0.33	-0.40	-0.07	-0.51***
No of observation	22758	48041	22766	44460	22595	47765
Pseudo R ²	0.05	0.06	0.05	0.06	0.05	0.06

Sources- Own calculation from DLHS 4 date, *** significant at 1 % level, ** significant at 5 % level , * significant at 10% level

In order to examine whether the determinants of child marriage has changed over time, I conduct separate Logistic regression in two age cohorts (20-24 & 30-34). Here again, we use the three separate models. **Table-10** gives the regression results in the two age cohorts for India. Breaking up the regression gives some very striking results.

In India, the probability of early marriage for the older age cohort was higher among the Muslims than Hindus But, it is insignificant among the younger age cohort. The same thing is happening for STs. The SCs have a higher probability of a girls getting married before the age of eighteen than the general category in 30-34 age cohort, but it is lower probability for 20 -24 age cohort (**Table-10**).

In case of India, husband's education never plays a role in reducing the probability of child marriage among women , who are in younger and older age cohort. But, women with higher secondary education have a significantly reduces the probability of child marriage among women who are in younger as well as in older age cohort.

In **Model-2 (Table-10)**, however, household having a BPL card does not play any role in determining the probability of child marriage among women, who are in younger age group. But, it is significant at one percent level in older age group. It is just the opposite case in a

matter of structure of house. Similarly, the types of fuel is a significant factor for child marriage in India at 1 percent level in 20-24 and 30-34 age cohort.

From **Model-3 (Table 10)**, it is seen that, the village infrastructure quintile plays a significant role to reduce the child marriage among women who are now 30 -34 age cohort. Moreover, the village with greater number of child development scheme and other welfare schemes have lower incidence of child marriages among two age cohort. It implies that, the village with greater number of child development scheme and other welfare scheme have lower probability for child marriage in India.

7. CONCLUSION

This study shows that the percentage of child marriage is declining trend in India. However, the decline is not uniform across states, because of unequal level of socio-economic development in India. Moreover, the prevalence of child marriage is highest in West Bengal and though the figure has come down, it still is large enough to merit attention.

The largest drop in the prevalence of child marriage has been in the under-15 marriages, while marriages in the age group 15-17 years continue to occur quite common in a number of states in India. Mean age at marriage of Indian women has risen steadily over the years in every state, including those where the prevalence of child marriage is quite high, such as West Bengal, Tripura and Andhra Pradesh etc. So, Govt. has to take some policy to increase the level of socio-economic development and work opportunities at the grass root level as well as the state level in India.

Individual and household socioeconomic characteristics, such as place of residence, education, religion, caste and wealth quintile are important in determining factor of child marriage (only females) in India. In case of India, there is a greater tendency towards child marriage among rural women, irrespective of educational and wealth differences between rural and urban women, which suggests that marriage practices in rural areas are influenced strongly by traditional values.

However, Poverty and lower education are two crucial factors for child marriage in India. Thus, the findings of the study suggest that to reduce the prevalence of poverty and to remain girls in school for a longer period are necessary not only to raise their age at first marriage but also to promote the individual development and their potential contribution to society for overall development. In the present study shows that, the middle and higher education play a significant factor among women to reduce the child marriage in India

In view of these findings, special attention needs to be given to the issue of child marriage in India. A targeted policy is needed to create awareness about the negative consequences of child marriage. In this context, educational intervention (Balika Samridhi Yojana) and empowerment intervention (Kishori Sakti Yojana) are two crucial policies by Government of India which should be continued and distributed at the grass root level in India.

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Professional Biography of Authors

Mr. Purnendu Modak has completed his M.sc, B.Ed and M.phil in economics from University of Calcutta. He has also qualified NET. Currently he is working as a research scholar at University of Calcutta.