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Determinants of Girl-Child Marriage in High Prevalence States in India

By Purnendu Modak¹

Abstract

The present study aims to investigate the determinants of girl-child marriage in the high prevalence states of India. The purpose of the study was to analyze various socio-economic, demographic, cultural, and village-level characteristics that are important in determining factors for girl-child marriage in high prevalence states of India. Binary logistic regression was applied to analyze secondary data (DLHS-4 data of 2012 -13) of 1,25,549 girls who were married off early. The results of this study indicated that the individual and household socio-economic and demographic characteristics, such as place of residence, education, religion, and caste were important factors determining girl-child marriage among high prevalence states in India. Moreover, it can be observed that there is a greater tendency towards child marriage among rural women, irrespective of educational and wealth differences in high prevalence states in India. Furthermore, it was also found that the largest drop in the prevalence of girl-child marriage is in the under-15 marriages, while marriages in the age group of 15-17 years is common in a number of high prevalence states like West Bengal, Tripura and Andhra Pradesh. The results show that the wealth quintile, village infrastructure quintile, and households that have a BPL card do not play any significant role as variables in reducing girl-child marriages in West Bengal and Andhra Pradesh. In this study, I have observed that girls with secondary and higher education have much lower chances of early marriage as compared to illiterate girls. Thus, education and early marriage are found to be closely linked.

Keywords: Child Marriage, Mean Year of Schooling, Village Infrastructure Quintile, Wealth Quintile

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. However, "child marriage is one of the most prevalent forms of sexual abuse and exploitation, especially among adolescent girls. It serves as a means of perpetuating power imbalances between men and women, both at home and outside" (Ghosh, 2011, p.1). Moreover, girl-child marriage has seriously affected sustainable development goals and millennium development goals in under-developed countries, including India. Within India, West Bengal, Tripura and Andhra Pradesh are the most affected states in this regard. Child marriage has five domains of impact on adolescent girls: (i) Fertility and population growth; (ii)

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Health, nutrition, and violence; (iii) Educational attainment; (iv) Labour force participation, earnings, and productivity; and (v) Decision-making and other areas (Wodon et.al, 2017).

According to the “Prohibition of Indian Child Marriage Act 2006”, child marriage today is defined as one where girls and boys are married below the age of 18 and 21, respectively. The UNICEF (2008) report revealed that India has the twelfth highest rate of child marriage in the world. About 40 percent of the world’s total child marriages occur in India. Similarly, 47 percent of Indian women and 56 percent of rural women, aged between twenty and twenty-four, marry below the age of 18. Child marriage is a serious problem in India. It is far more serious in West Bengal, Bihar, Rajasthan, and Andhra Pradesh. A report of the International Institute for Population Science (n.d) showed that the percentage of women between ages twenty and twenty-four who 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 states 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) were found to be the areas with highest incidence of girl-child marriage in India. Similar results were found in the case of Census-2011 as well as in the DLHS-4 data. Table 1 shows this result. For this reason, I have chosen the top three states (West Bengal, Tripura and Andhra Pradesh) in my analysis, which are very close and available in my data. In this study, I used DLHS-4 (2012-13) unit level data. This is national level data covering 336 districts in 26 states and Union Territories. It excludes the states covered by the previous Annual Health Survey, i.e. the EAG states (Bihar, Jharkhand, Uttar Pradesh, Uttarakhand, Madhya Pradesh, Chhattisgarh, Rajasthan, Orissa and Assam). The data regarding child-marriage in the high-prevalence states are presented as under the following Table 1:

Table 1: Percentage of Child marriage in High Prevalence States in India

Prevalence of Child Marriage	Census 2011	DLHS-4 (2012- 13)	NFHS-4 (2015-16)
	Percentage of girls married at less than 18 years of age (Ever- married women)	Currently Married women aged 20-24 years married before age of 18 years	Currently Married women aged 20-24 years married before age of 18 years
India	31.88	27.06	26.8
High Prevalence State in India			
West Bengal	43.04(2 nd Highest)	49.1 (Highest)	40.7 (Highest)
Tripura	41.64	43.44	32.2
Andhra Pradesh	42.92	36.47	32.7

Source: (1) Office of the Registrar General & Census Commissioner, Ministry of Home Affairs, Government of India for Census -2011 data; (2) Ministry of Health and Family Welfare, Government of India (2013) for DLHS-4(2012-13) data; (3) International Institute for Population Science (IIPS). (n.d) for NFHS-4 Report

This paper is divided into six sections. The next section offers a brief discussion of the primary reasons responsible for child marriage. The objectives of the study are spelled out in the following section. Section-4 of the paper discusses the data and methodology. Section-5 provides the results and discusses the various socio-economic and demographic factors associated with girl-child marriages in high prevalence states in India, and Section-6 provides the conclusion and emphasizes policy implications and future research study.

Primary Reasons for Child Marriage

Child marriage is one of the key factors which hinders economic development in many states, including West Bengal, Tripura and Andhra Pradesh. It renders a significant sector of girls and women vulnerable.

Poverty is one of the main determinants of early marriage. Poor parents think of girls as an economic burden for families. They try to marry their daughters off at an early age to reduce family expenditures and to minimize the cost of marriages (Nayan, 2015). Moreover, child marriage is still prevalent in India due to lack of education, enlightenment and awareness among people (Nayan, 2015). Girls with secondary and higher secondary educational attainment will tend to postpone their marriages in order to improve their chances of better economic livelihood and independence (ICRW, 2012).

In highly patriarchal societies, the husband's educational attainment is likely to matter as much as that of the wife. Men with lower educational attainment have greater chances of having younger wives, who are generally assigned traditional female roles. I, therefore, postulate that women with husbands with fewer years of schooling marry earlier than those with husbands with more years of schooling (Srinivasan et al, 2015).

Some religious communities tend to emphasize child marriage among females because of traditional customs that prevail in the communities. Women from socio-economically 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 of cultural reasons (Srinivasan et al, 2015).

Researchers have shown that girls who marry before 18 are more likely to be married to much older men. There is a strong association between the age gap and girls getting married at an early age (ICRW, 2007). Moreover, the 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 & Cain, 1997).

Objective of the Study

The objectives of this paper are:

- 1) Using DLHS-4 unit level data, I have attempted to discover the determinants of girl-child marriage among high prevalence states in India.
- 2) To analyze the various demographic, socio-economic and cultural factors leading to girl-child marriages among high prevalence state in India.
- 3) To investigate if any relationship exists between the village infrastructural development and prevalence of girl-child marriages among high prevalence states in India.

Data and Methodology

Data

In this study, DLHS-4 (Ministry of Health and Family Welfare, Government of India, 2012-13) unit level data is used as the main data source. I use unit level household data, ever-married² women data, and village level data to identify the determinants of child marriage among high prevalence states in India. I use DLHS-4 data as the main data source and latest data; no other

² Ever-married women are those persons who have been married at least once in their lives although their current marital status may not be "married".

data source is available which offers information on the variables used in this paper. It offers information not only at the district level, but also at the village level in India, by which I was able to measure the prevalence of girl-child marriages in the villages of West Bengal, Tripura and Andhra Pradesh. In Census-2011 and the National Family Health Survey (NFHS)-4 data there is no information on this variable.

Methodology

I have used a logit model with the objective of investigating the determining factors which play a significant role in the incidence of girl-child marriages among high prevalence states in India. Clearly, the logit model is used because my dependent variable, the dummy dependent variable, takes the value of 1 if a girl has married below 18 and 0. The age of marriage of a girl is given in the data for ever married girl or woman in the DLHS-4 data. Three models of regression have been used to estimate the determinants of girl-child marriages among high prevalence states in India. The first logit model to explain whether a girl marries before 18 or not is,

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

Where P is the probability of a girl marrying before 18 and X is the vector of dummies for a 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 the husband's educational qualification (the educational dummies being primary, middle, and higher education with "illiterate" as the reference category). Z is the vector of household characteristics (religion, locality, caste, and wealth quintile) and other women characteristics (age gap & occupation). β , μ , γ are 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 has a Below Poverty Line (BPL) card (or not), whether firewood is used as a fuel (or not) for cooking, whether the structure of the house is 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 was taken as a whole. The second model is thus specified as,

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

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

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

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

Here V is the vector of village characteristics i.e., village infrastructure quintile, natural disaster, village(s) with Mahila Mandal (MM) & Self-Help Group (SHG), village(s) with an employment scheme and other scheme facilities, and θ is the vector of the parameters associated with it. The

rest of the variables are described in Model 1. The village infrastructure quintile has been calculated from the village level data of the DLHS-4.

Results and Discussion

Relationship between Girl-Child Marriage and Socio-economic Factors among High Prevalence States in India

Needless to say, child marriage is a serious problem among high prevalence states in India. Here, I have examined the socio-economic and demographic characteristics of girls and women such as the place of residence, religion, caste and household wealth status as important variables to estimate the age of marriage among women who were married below the age of 18.

Table 2 shows the mean age at marriage and percentage of girls and boys getting married below the legal age of marriage in every state in India. As per the DLHS-4 data, the mean age at marriage for men was the highest in Goa (29.6 years) and lowest in Haryana (23.8 years). Similarly, the mean age at marriage for women was among the highest in Goa (25.3 years) and lowest in West Bengal (19.2 years). The overall mean age at marriage was 26 years for men, and 21.9 years for women. For both men and women, mean age at marriage in urban areas was higher by 1 year than in rural areas. On the whole, 20.7 and 21.22 percent of the marriages among men and women were below the respective permissible legal ages for marriage of 21 and 18 years respectively. The highest proportion of marriage below the legal age for women was found in West Bengal (31.6 percent), followed Tripura (21.9 percent) and Andhra Pradesh (19.9 percent). Among all states in India, the mean age at marriage increased among men and women from DLHS-3 to DLHS-4 data. As per the DLHS-4 data, 27.06 percent of the women in the age group of 20-24 years got married before 18 years, out of which 29.83 percent were in rural areas and 24.29 percent were in urban areas. However, higher incidence of early marriage for women took place in the state of West Bengal (49.1 percent), Tripura (43.44 percent), Andhra Pradesh (36.47 percent), and Arunachal Pradesh (36.1 percent) etc. By comparing the DLHS-3 data with the DLHS-4 data for the currently married women aged 20-24 years who married before the age of 18, it can be seen that the overall percentage change in child marriages have not uniformly declined in all states in India. For example, Andhra Pradesh (21.4 percent), Karnataka (17.1 percent), Meghalaya (11.34 percent), and Tamil Nadu (9.65 percent) have performed very well in terms of reducing child marriage in India.

Table-2: Mean Age at Marriage and Percentage of Marriages below the Legally Prescribed Minimum Age of 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		Current ly Married Women Aged 20-24 Married Before 18	Current ly Married Women Aged 20-24 Married Before 18	
	Me n	wome n	Men Aged Less than 21 years	Wom en Aged Less than 18 year	Me n	wom en	Men Aged Less than 21 year	Wome n Aged Less than 18 Year			
Andaman & Nicobar	24.9	21.1	3.8	7.8	26	21.6	5.2	6	19.64	24.5	4.86
Andhra Pradesh	24.3	19.8	14.7	19.9 (3)	24	19	19.5	28.6	36.47 (3)	51.9	21.4
Arunachal Pradesh	24.5	21.3	18.3	13	25	21.7	14.5	8.2	36.1	26.2	-9.9
Chandigar h	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
Maharash t ra	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
Meghalay a	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		

Pondicherry	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	21.9 (2)	26	20.2	16.5	21.1	43.44 (2)	43.6	0.16
West Bengal	25.4	19.2	15.8	31.6 (1)	25	18.5	21.7	41.3	49.1 (1)	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	21.22					27.06		
DLHS-3					24	20.2	23.4	22.1		38.7	

Source:(i) Ministry of Health and Family Welfare, Government of India (2013) for DLHS-4(2012-13) data;(ii) International Institute for Population Science (IIPS) (2010) for DLHS-3 (2007-08) data

In order to map the improvement in the percentage of girls' child marriage and also the progress made in reducing the proportion of girls getting married below the legal age, a comparison has been done between the rest of India and the high prevalence states in West Bengal, Tripura and Andhra Pradesh. Table-3 shows that the largest drop in the prevalence of girl-child marriages were found in the under-15 marriages, while marriages in the age group 15-17 years, continue to occur quite frequently in a number of high prevalence states in India. The individual and household socio-economic characteristics, such as place of residence, education, religion, and caste were important factors in determining girl-child marriages in the rest of India as well as in West Bengal, Tripura and Andhra Pradesh. In West Bengal, the percentage of girl-child marriage in the below 15 years and 15-17 years age group were found to be greater than those in the other high prevalence states in India. A higher proportion of girls from Below Poverty Line (BPL) families belong to that group in West Bengal, Tripura and Andhra Pradesh. From these tables, it can be discerned that West Bengal's performance is poorer than the other high prevalence states in India in term of marriage below eighteen in rural areas than the urban areas, and also slightly higher among Muslims than Hindus. A systematic drop in the percentage of girl-child marriages among girls was witnessed as the level of schooling rises. Among high prevalence states in India, the percentage of girl-child marriage was higher among the illiterate and primary educated women in the below 15- and 15-17-year age groups. The education level of the husband plays another important role in reducing child marriage among girls as level of schooling rises. In the case of West Bengal, 10.13 and 38.12 percent of the women who married before fifteen and between fifteen and seventeen years of age respectively had illiterate husbands. Similarly, In Tripura, 12.95 and 42.59 percent of women who married before they turned fifteen and between fifteen and seventeen years of age respectively had primary-educated husband. A Wealth Index was calculated from household

assets. Among high prevalence states in India, the percentage of child marriage was higher among the poorest households as compared to the richest households in the below 15 years and 15-17 years age groups. Here, West Bengal's performance is worse than the other high prevalence states in India.

Table-3: Demographic and Socio-economic Characteristics of Currently Married Women Aged 20-24 Years and Age at Marriage in West Bengal, Tripura, Andhra Pradesh and Rest of India

Demographic and Socioeconomic Characteristics of Girls / Women		Rest of India			West Bengal			Tripura			Andhra Pradesh			
		Women Married			Women Married			Women Married			Women Married			
		< 15 year	15-17 year	≥ 18 year	< 15 year	15-17 year	≥18 year	< 15 year	15-17 year	≥ 18 year	< 15 year	15-17 year	≥18 year	
Religion	Hindu Muslim	5.1		75.5					30.3	61.7		28.1	66.9	
		8	19.3	2	11.1	31.3	57.52	7.99	1	0	4.94	0	6	
		5.4	22.17	72.4	8	37.1	47.93	9.38	32.8	57.8	5.61	29.0	65.3	
		1		2	14.9	7			1	1		3	6	
Caste	SC ST OBC OC	5.2	20.5	74.2	11.3	41.1	47.55	14.0	26.1	59.7	5.84	28.2	65.9	
		8	22.22	2	2	3	51.8	9	7	4	7.87	1	5	
		5.3	18.23	72.3	10.2	37.9	58.99	14.2	33.9	51.8	4.75	29.6	62.5	
		9	20.87	9	2	8	53.98	1	6	3	4.97	3	66.1	
		4.3		77.3	7.42	33.5		6	33	61		29.1	2	
		8		9	9.39	9		14.1	30.1	55.6		3	71.8	
		4.5		74.5		36.6		5	9	6		23.2	3	
5		8		3						0				
Type of locality	Rural Urban	5.8		69.5					31.2	57.4		29.5	59.9	
		5	24.63	2	15.1	32.9	52	11.2	9	8	10.58	2	68.1	
		3.8	20.67	75.4	6.3	23.2	70.5	8.96	24.2	66.7	7.89	23.9	3	
9		4						8	6		8			
Highest Education Level of Girls/ Woman	Illiterate Primary Middle Secondary HS +	10.		60.8					39.1	46.6		36.2	52.1	
		11		57.3	17.3	42.1		14.2	2	5		3	2	
		10.	29.09	1	3	3	40.54	3	41.1	5	11.65	38.9	50.7	
		02	32.67	64.9	16.6	44.3	38.98	13.3	9	45.4	10.32	6	2	
		5.5	29.45	8	5	7	49.7	4	38.1	7	4.96	35.1	59.9	
		7	22.03	75.0	7.74	42.5	63.83	5.64	8	56.1	2.99	2	2	
		2.9	9.46	6	3.25	6	87.16	3.12	29.9	8	1.02	26.9	70.0	
				89.7	0.91	32.9			1.12	66.9		6		5
		1		7		2				7		8.96		

		0.7 7				11.9 3				89.0 5			90.0 2
Highest Education Level of husband	Illiterate	9.4 5	27.78	62.7 7	10.1 3	38.1 2	51.75	9.63	36.5 6	53.8 1	8.96	35.9 6	55.0 8
	Primary	8.3 1	31.3	60.3 9	13.5 6	44.7	41.74	12.9 5	42.5 9	44.4 6	11.56	40.2 6	48.1 8
	Middle	5.5 1	26.73	67.7 6	8.92	39.4 3	51.65	7.85	37.5 8	54.5 7	6.98	36.9 8	56.0 4
	Secondary	3.2 4	22.07	74.6 9	4.03	38.0 8	57.89	3.29	36.8 9	59.8 2	2.98	34.9 5	62.0 7
	HS +	1.9 5	14.41	83.6 4	2.53	18.0 8	79.39	1.59	17.2 5	81.1 6	1.29	16.1 6	82.5 5
Having BPL card or not	BPL	6.2 2	25.62	68.1 6	11.4 2	39.9 3	48.65	12.0 8	33.2 2	54.7	5.43	28.2 2	66.3 5
	APL	4.4 5	21.61	73.9 4	9.74	35.5 1	54.75	11.8 9	29.3 7	58.7 4	4.78	27.0 9	68.1 3
Wealth Quintile Index	Poorest	10.8 2	29.99	59.1 9	15.5 4	41.9 2	42.54	21.7 0	33.9 6	44.3 4	6.76	29.1 8	64.0 6
	Poor	7.9 1	26.24	65.8 5	13.3	39.0 5	47.65	13.0 1	32.5 9	54.4	3.83	25.6 7	70.5
	Middle	6.0 7	22.23	71.7	12.0 3	36.0 7	51.9	8.64	30.7 2	60.6 4	2.21	26.1 1	71.6 8
	Rich	4.0 1	18.46	77.5 3	7.89	28.5 2	63.59	5.71	25.7 1	68.5 8	2.19	22.6 3	75.1 8
	Richest	2.3 5	12.99	84.6 6	3.85	22.6 7	73.48	3.11	22.2 2	74.6 7	3.03	21.2 7	75.7 0

Source: Ministry of Health and Family Welfare, Government of India (2013) for DLHS-4(2012-13) data. All figures are in percentage

Note-SC-Scheduled Caste, ST-Scheduled Tribe, OBC-Other Backward Class, OC-Other Caste
HS +--Higher Secondary & Above, APL-Above Poverty Line, BPL-Below Poverty Line

Table 4: Percentage of Currently Married Women Aged 20-24 Years by Age of Marriage Below 18 Years and Village Infrastructure Quintile in West Bengal, Tripura, Andhra Pradesh and Rest of India.

Rest of India				
Village Infrastructure Development and Child Marriage Prevalence		Married Below 15 years	Married at 15-17 years	Married at 18 Year and above
Village Infrastructure Quintile	1 (Least)	10.37	25.30	64.33
	2	9.85	24.46	65.69
	3	9.22	22.88	67.90
	4	9.01	21.65	69.34
	5 (Highest)	7.74	20.80	71.46

West Bengal

Village Infrastructure Quintile	1 (Least)	20.81	39.31	39.88
	2	19.67	37.22	43.11
	3	17.81	36.26	45.93
	4	16.96	33.14	49.90
	5 (Highest)	14.23	29.12	56.65

Tripura

Village Infrastructure Quintile	1 (Least)	17.72	36.28	46.00
	2	16.61	34.17	49.22
	3	14.71	33.21	52.08
	4	13.86	30.11	56.03
	5 (Highest)	11.14	26.09	62.77

Andhra Pradesh

Village Infrastructure Quintile	1 (Least)	15.12	34.21	50.67
	2	14.06	32.15	53.79
	3	12.18	31.22	56.60
	4	11.84	28.12	60.04
	5 (Highest)	9.11	24.11	66.78

Source: Ministry of Health and Family Welfare, Government of India (2013) for DLHS-4(2012-13) data. All figures are in percentage

It has been observed earlier that girl-child marriages are much more prevalent in low-educated areas and areas with poor infrastructure. To examine this aspect, in Table-4, 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 infrastructure. Among the high prevalence states in India, the proportion of below-15 and between 15 -17 marriages fall as village infrastructure improves. In the rest of India, 10.37 percent of the women in villages with the least infrastructure, married before fifteen years of age and another 25.3 percent married between fifteen and seventeen years.

In the highest infrastructure villages, the proportions were 7.74 percent and 20.8 percent respectively.

As education is a very important variable in determining the age of marriage, Table-5 represents the rural (urban) classification of the mean year of schooling in different religious categories and age groups among women (married and unmarried) candidates in high prevalence states and the rest of India. Among the high prevalence states in India, the mean year of schooling was lower than the rest of India in the age groups of 12-17 and 18-23 years. In the 12-17 years age group, among high prevalence states in India, the mean year of schooling for Christians is higher than Muslims, among women (married & unmarried) candidates in rural as well as in urban areas, which indicates that early marriage is more common among Muslims than among Christians, because the mean year of schooling is found to be lower among Muslims. In the 12-17 years age group, among high prevalence states in India, the mean year of schooling of the urban women (married & unmarried) candidates is higher than that of rural women (married & unmarried) candidates. Similarly, the mean year of schooling among urban unmarried women candidates is higher than the rural unmarried women candidates in all categories and age groups. The present study shows that the mean year of schooling is lower in West Bengal compared to other high prevalence states in India, which implies that lower mean year of schooling is a major factor for early marriages in West Bengal. Moreover, in the 12-17 years age group, among the married women (rural & urban) candidates, the mean year of schooling is lower than that of unmarried (rural & urban) women candidates in high prevalence states as well as in the rest of India. I therefore conclude that education is scarcer among married girl and women candidates. Moreover, early marriages are more common in rural areas than in urban areas, because the mean year of schooling is seen to be lower in rural areas.

Table 5: Rural (Urban) Classification of Mean Year of Schooling in Different Religions Category and Age Group among Girls/Women (Married & Unmarried) Candidates in West Bengal, Tripura, Andhra Pradesh and Rest of India

AGE	Rest of India															
	Girls/Women															
	RURAL								URBAN							
	Married				Unmarried				Married				Unmarried			
	H	M	C	O	H	M	C	O	H	M	C	O	H	M	C	O
12-17	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)	10.5 (2.4)
18-23	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)

West Bengal

12-17	7.9 (2.2)	7.5 (2.5)	8.2 (2.6)	8.2 (2.7)	8.2 (1.9)	8.1 (2.1)	8.5 (1.9)	8.5 (1.8)	8.2 (2.1)	7.8 (2.7)	9.1 (2.3)	8.6 (2.4)	8.6 (1.9)	8.3 (2.4)	9.9 (2.6)	9.1 (2.5)
18-23	8.2 (3.1)	8.1 (2.9)	8.3 (3.5)	8.4 (3.2)	10.3 (3.2)	9.3 (3.4)	10.8 (3.1)	10.8 (2.2)	8.9 (3.3)	7.9 (3.1)	9.3 (3.5)	8.9 (2.8)	10.7 (3.1)	9.8 (3.3)	12 (2.6)	9.6 (4.9)

Tripura

12-17	8.2 (2.2)	8 (2.5)	8.3 (2.6)	8.4 (2.7)	8.4 (1.9)	8.2 (2.1)	8.6 (1.9)	8.8 (2.1)	8.4 (2.1)	8.3 (2.7)	9.3 (2.5)	8.7 (2.6)	9.3 (1.9)	8.7 (2.4)	10 (2.6)	9.9 (2.7)
18-23	8.4 (3.1)	8.3 (2.9)	8.5 (3.5)	8.7 (3.4)	10.5 (3.2)	10.4 (3.4)	10.9 (3.1)	10.9 (2.2)	9.1 (3.3)	9 (3.1)	9.5 (3.5)	9.5 (2.8)	11.1 (3.1)	10.8 (3.3)	12.4 (2.6)	12.1 (4.9)

Andhra Pradesh

	8.5	8.3	8.6		8.7	8.5	8.9	9	8.6	8.5	9.8	9	9.6	9.4	10.2	10.3
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12-17	(2.1)	(2.4)	(2.7)	8.7 (2.8)	(1.8)	(2.2)	(1.8)	(2.2)	(2.2)	(2.6)	(2.6)	(2.5)	(1.8)	(2.3)	(2.4)	(2.6)
18-23	8.7 (3.2)	8.6 (2.8)	8.8 (3.4)	9 (3.3)	10.7 (3.3)	10.6 (3.5)	11 (3.2)	11.1 (2.3)	9.3 (3.4)	9.2 (3.2)	10.6 (3.6)	9.8 (2.9)	12.4 (3.3)	10.9 (3.4)	12.5 (2.7)	12.7 (4.9)

Source: Ministry of Health and Family Welfare, Government of India (2013) for DLHS-4(2012-13) data.

Note- within bracket-SD & without bracket-Mean, H-Hindu, M-Muslim, C-Christian, O-others

Econometric Analysis of the Findings: Determinants of Girl-Child Marriage among High Prevalence States in India

I conducted logistic regression for high prevalence states and tried to estimate the factors which determine the probability of girls getting married below the age of 18 years. Model-1 (Table-6) is a basic model which considers a woman's own education, her husband's education, her religion, caste and wealth quintile of the household. Among high prevalence states in India, Muslims have a higher probability for girls getting married before the age of 18 than Hindus. Moreover, Christian and other religions have a lower probability of girl-child marriages than Hindus. Similarly, Scheduled Castes and Scheduled Tribes have a higher probability of early marriage than the general category in West Bengal, Tripura and Andhra Pradesh. Belonging to the OBC and husbands' academic qualifications are not so important factors to be associated with girl-child marriages in the case of West Bengal, Tripura and Andhra Pradesh. Husbands with higher educational qualifications are significant factor though in Andhra Pradesh and the rest of India. The probability of girls with primary education getting married earlier are insignificant than that of illiterate girls in high prevalence states in India. However, the probability of child marriage decreases when a girl has education up to middle or higher school in all cases. This is because women with higher education qualifications have attained higher occupational aspirations rather than getting married earlier. The wealth index is an indirect indicator of the socio-economic status of women and their parents, as well as their in-laws. Our findings reveal that among high prevalence states in India, wealth quintile does not play any significant role to determine the girl-child's marriage in West Bengal and Andhra Pradesh, but it is significant in Tripura and the rest of India. This raises an important question of whether any policies which give cash transfers to households or improve the economic condition of the households would at all have any effect on reducing the extremely high rate of child marriage in West Bengal and Andhra Pradesh.

To check the validity of this result, in Model-2 (Table-6), I have substituted the wealth quintile with six important features determining the standard of living of a household. I have taken six variables to measure the standard of living for a household. For example, whether a family has a Below Poverty Line (BPL) card or not, the type of house is Pucca or not, the household uses firewood as a cooking fuel or not, household has electricity or not, types of toilet and source of drinking water in the household. In the case of high prevalence states in India, the structure of the house and the source of lighting are highly significant factors (at 1 percent level) to be associated

with child marriage than women who using Pucca houses. Moreover, the types of fuel used and households with a BPL card are also significant factors to be associated with girl-child marriages in Tripura and the rest of India. But these are insignificant in West Bengal and Andhra Pradesh. This strengthens the conclusion that poverty is not a driving force behind the high rates of girl-child marriage in West Bengal and Andhra Pradesh. There may be some other factors responsible for the high rate of girl-child marriages in these two states.

In Model-3 (Table-6), I have retained the wealth quintile and brought in controls for village infrastructure. This is to test whether the prevalence of girl-child marriage is higher in backward villages or not. The effect of a girl's education, her husband's education, her religion, caste, and wealth quintile remain unchanged in Model-3. Village infrastructure development is a significant factor to be associated with girl-children's marriages in Tripura and the rest of India. Here, I have found that the probability of girl-child marriage falls as the village infrastructure improves. It is likely that the districts with poor basic infrastructure, amenities, remoteness, and being an inaccessible village or, very small-sized villages will have higher incidences of girl-child marriages, because these villages are less likely to receive consistent government aid and attention. The aftermath of Natural Disasters (check Table-6) and villages with Mahila Mandal are significant factors to be associated with girl-child marriages in Tripura, Andhra Pradesh and the rest of India. The women-child development scheme and other welfare schemes are not such important factors to be associated with girl-child marriage in the high prevalence states in India.

The present study shows that the determinants of girl-child marriage were significantly deferred in high prevalence states and the rest of India. Since the wealth of household and village infrastructure development are significant factors to be associated with girl-child marriages in the rest of India and Tripura, the high rates of girl-child marriages in West Bengal and Andhra Pradesh cannot be attributed to the lack of economic or infrastructure development. These factors turn out to be insignificant. There are some other factors, potentially cultural, which are responsible for the high rate of girl-child marriages and very careful attention needs to be given to this issue.

Table-6: Determinants of Girl-Child Marriage among High Prevalence State in India

Girls/Women age of Marriage (less than 18 years)	Model-1				Model-2				Model-3			
	Rest of India	West Bengal	Tripura	Andhra Pradesh	Rest of India	West Bengal	Tripura	Andhra Pradesh	Rest of India	West Bengal	Tripura	Andhra Pradesh
Religion (Hindu reference³)												
Muslim	0.21** *	0.36** *	2.46** *	0.84***	0.18***	0.21** *	2.02** *	0.79***	0.23** *	0.35** *	2.41** *	0.81***
Christian	-0.77** *	-	-1.01*	-0.79*	-0.78***	-	-1.09*	-0.71*	0.71** *	-	-1.03*	-0.75*
other	-0.51** *	-0.82*	-0.73	-0.75	-0.57***	-0.51*	-0.59	-0.69	-	0.48** *	-0.86*	-0.71
Caste (General Reference)												
SC	0.05** *	0.20** *	0.92** *	1.01***	0.01***	0.05** *	0.92** *	1.05***	0.01** *	0.18** *	0.89** *	1.02***
ST	0.12** *	0.21**	1.83** *	1.42**	0.18***	0.12** *	1.79** *	1.39**	0.11** *	0.24**	1.78** *	1.41**
OBC	0.01	-0.03	-0.43	0.52	0.03	0.01	-0.41	0.49	0.02	-0.03	-0.43	0.52
Locality (Urban reference)												
Rural	0.20** *	0.30	0.27** *	0.51	0.21***	0.20	0.25** *	0.53	0.30** *	0.29	0.26** *	0.52
Husband's education (Reference illiterate)												
Husband primary education	0.09	0.36	1.04	-14.6	0.07	0.09	1.04	-14.6	0.08	0.37	1.04	-14.6

³ In logit model one value (typically the first, the last, or the value with the highest frequency) of the dependent variable is designated as the reference category. The probability of membership in other categories is compared to the probability of membership in the reference category.

Husband Middle education	- 0.04** *												
Husband Higher education	- 0.06** *	0.32	0.83	-14.5	-0.08	-0.04	0.83	-14.5	-0.06	0.33	0.83	-14.5	
		-0.13	-0.94	-	-0.12***	-0.06	-0.92	-	-	-0.10	-0.94	-	12.35** *
Wives' education (Reference illiterate)													
Women primary education	-0.05	-0.08	-0.08	-16.26	-0.06	-0.05	-0.07	-15.01	-0.05	-0.08	-0.08	-14.09	
Women Middle education	- 0.43** *	- 0.53** *	- 0.54** *	- 16.28** *	- -0.46***	- 0.43** *	- 0.51** *	- 16.28** *	- 0.42** *	- 0.53** *	- 0.54** *	- 16.28** *	
Women Higher education	- 1.52** *	- 2.08** *	- 0.02** *	- 18.01** *	- -1.60***	- 1.52** *	- 0.05** *	- 18.01** *	- 1.51** *	- 2.06** *	- 0.02** *	- 18.01** *	
Age gap	0.06**	0.08*	0.04	0.05	0.07**	0.10*	0.04	0.05	0.09**	0.09*	0.04	0.05	
Respondent occupation (No Work Reference)													
Working	- 0.13** *	- 0.16** *		-	0.19** *	0.17** *		-	0.12** *	0.09** *			-1.59**
Wealth Quintile	- 0.14** *		0.46** *	0.35					- 0.13** *	-0.04	0.48** *	0.36	
Types of Fuel (Reference Firewood)					0.04**	0.05	- 0.61** *	-0.03					
Structure of House (Reference Pucca)					-0.08***	- 0.15** *	- 0.29** *	0.96***					
Household BPL card					0.21***	0.04	- 0.17**	0.55					

(Reference APL)												
Source of Lighting (Electricity Reference)					0.22***	0.07** *	0.09** *	0.12**				
Types of Toilet (Pit latrine Reference)					0.12**	0.05	0.08**	0.09*				
Source of Drinking Water (Reference Public tap)					0.19***	0.04	0.41	0.13				
Village Infrastructures Quintile									- 0.03** *	-0.01	- 0.30** *	0.33
Natural Disaster									0.13** *	-0.02	- 0.72** *	0.59***
Principal Occupation in village (Ref-Agriculture)									0.25	0.19	0.12	-0.66
Village with Mahila Mandal									- 0.03**	-0.02	- 0.53**	-0.42**
Village with self-help group									- 0.04**	0.17*	0.57	0.39
Women & child									- 0.28** *	-0.03	2.14	-2.31

Modak: Determinants of Girl-Child Marriage in India

development scheme score												
Other welfare scheme score									-0.34** *	-0.08	-1.75	0.64
Cons	-0.13** *	0.13** *	-0.09** *	0.11***	0.51***	0.08** *	0.25** *	0.18***	-0.31** *	0.09** *	-4.02** *	29.15** *
No of observation	115509	8344	7969	8142	127509	9143	8516	8748	128909	9493	8996	9148
Pseudo R ²	0.05	0.06	0.06	0.07	0.05	0.06	0.04	0.07	0.06	0.05	0.04	0.06

*** significant at 1% level** significant at 5% level, * significant at 10% level

Source: Ministry of Health and Family Welfare, Government of India (2013) for DLHS-4(2012-13) data,

Conclusion, Policy Implications, and Directions for Future Research

This study has demonstrated that the prevalence of girl-child marriage is declining in India. However, the decline is not uniform across states because of unequal levels of socio-economic development, modernization, and income distribution at the state level in India. The prevalence of girl-child marriages is the highest in West Bengal compared to all other states in India. From this analysis, I find that the largest drop in the prevalence of girl-child marriage has been in the under-15 marriage group, while marriages in the age group of 15-17 years are found to be quite common in a number of high prevalence states such as West Bengal, Tripura and Andhra Pradesh. Here, West Bengal accounts for a high incidence of girl-child marriage in the below 15- and 15-17-years' age groups than the other high prevalence states in India. Moreover, the mean age at marriage for West Bengal women is lower than the other states and the percentage of child marriage among women is higher in West Bengal than all the other high prevalence states in India. Therefore, the government must develop policies to increase the level of demographic and socio-economic development at the state as well as the national level in India. Individual and household socio-economic characteristics, such as place of residence, education, religion and caste are important factors determining girl-child marriages among high prevalence states in India. However, wealth quintile is a significant factor to be associated with child marriage in the rest of India and Tripura, but it is insignificant in West Bengal, and Andhra Pradesh. As the present study establishes, there is a greater tendency towards child marriage among rural women, irrespective of education and wealth differences in high prevalence states and the rest of India. This suggests that marriage practices in rural areas are influenced strongly by traditional values.

The present study also shows that girls with a secondary and higher education have a much lower chance of early marriage compared to the illiterate ones in both the high prevalence states and the rest of India. Thus, education and early marriage are closely linked. It has been observed that the household wealth quintile (taken as proxy for household income) does not affect the chances of early marriage among the high prevalence states like West Bengal and Andhra Pradesh. This negates the perception that poverty is the driving force behind child marriage in this state and therefore a special targeted scheme is needed to tackle this problem.

According to the DLHS-4-unit level data, I investigated the household and demographic characteristics in determining the probability of girl-children's marriages among the high prevalence states in India. However, these characteristics reflect the situation of those households which bring in child brides and not those households who marry off their daughters at a young age. The information about married girls and women's parental households was not available in the data source. However, since the practice of child marriage depends on both—the decision of the girl's parents as well as that of the groom's family—the absence of sufficient data pertaining to the bride's family, is a major research gap; the assumption that it is the bride's family that renders this decision alone, however, should not persist. Another limitation of this study is that the education, occupation, and income of the respondent's parents could not be included in the analysis, because the DLHS-4 data does not contain information on this variable. In fact, parents are the main decision-makers when arranging marriages for their daughters in West Bengal, Tripura and Andhra Pradesh. Therefore, parents' education should be considered as an important determinant of girl-children's marriages among the high prevalence states in India. Hence, future research analysis should focus on these areas.

References

- Amin, S., & Cain, M. (1997). The rise of dowry in Bangladesh. In G.W. Jones, R.M. Douglas, J. C. Caldwell, and R. M. D'Souza (Eds.), *The continuing demographic transition* (pp. 290-306). Oxford, England: Clarendon Press.
- Ghosh, B. (2011). Child marriage and its prevention: Role of adolescent girls. *Indian Journal of Development Research and Social Action*, 7(1-2), Jan-Dec., 2011, 49-62.
- International Centre for Research on Women (2007). New insights on preventing child marriage: A global analysis of factors and programs. Retrieved from <https://www.icrw.org/publications/new-insights-on-preventing-child-marriage/>
- International Centre for Research on Women (2012). Child marriage in Southern Asia: Context, evidence and policy options for action. Retrieved from <https://www.icrw.org/wp-content/uploads/2016/10/childmarriage-F-13.pdf>
- Ministry of Health and Family Welfare, Government of India. (2007-2008). District level household and facility survey (DLHS-3), 2007-08 India. Retrieved from <http://rchiips.org/pdf/rch3/report/India.pdf> . Mumbai: IIPS.
- Ministry of Health and Family Welfare, Government. of India. (2012-13). Results of District Level Household Survey - IV 2012-13 (DLHS - IV). Retrieved from <https://nrhm-mis.nic.in/SitePages/DLHS-4.aspx?RootFolder=%2FDLHS4%2FUnit%20Level%20Data&FolderCTID=0x012000742F17DFC64D5E42B681AB0972048759&View={F8D23EC0-C74A-41C3-B676-5B68BDE5007D}>
- Ministry of Law and Justice. (2007). The prohibition of child marriage Act, 2006, Act No. 6 of 2007. Retrieved from www.ncw.nic.in/acts/pcma2006.pdf
- Nayan, M. (2015). Child marriage in India: Social maladies and government's initiatives. *International Journal of Applied Research*, 1(5), 72 - 80.
- Office of the Registrar General & Census Commissioner, Ministry of Home Affairs, Government of India. (2011). C-4 tables, ever married, and currently married population by age at marriage and duration of marriage. Retrieved from www.censusindia.gov.in/2011census/population_enumeration.html
- Srinivasan, P., Khan, N., Verma, R., Giusti, D., Theis, J., & Chakraborty, S. (2015). District-level study on child marriage in India: What do we know about the prevalence, trends and patterns? New Delhi, India: International Centre for Research on Women.
- UNICEF (2009). The state of the world's children 2009: Maternal and Newborn Health. Retrieved from https://www.unicef.org/health/files/SOWC_2009_Main_Report__03112009.pdf
- Wodon, Q., Male, C., Nayihouba, A., Onagoruwa, A., Savadogo, A., Yedan, A., Petroni, S. (2017). *Economic impacts of child marriage : Global synthesis report*. (Conference edition). USA: World Bank Publications. Retrieved from <http://documents.worldbank.org/curated/en/530891498511398503/Economic-impacts-of-child-marriage-global-synthesis-report>