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Socio-Economic Determinants of Child Marriage in Uttar Pradesh

AN important demographic feature of India's population is a high incidence of child marriage among females. The reproductive span is, therefore, larger and in the absence of any significant practice of family planning, it becomes an important cause of high fertility in the country. The studies have shown that early marriages are associated with a high incidence of infant mortality (R. G. T., 1980 and Srivastava and Saksena, 1981). This in turn acts as an obstacle to a large scale adoption of small family norm (Saksena and Srivastava, 1980). The State of Uttar Pradesh, the most populous state of the country, presents a typical illustration of these relationships, where the incidence of child marriage as well as of infant mortality rates is among the highest and family planning acceptance rate, among the lowest in the country. For dealing with this kind of causal interrelations, it is useful to understand the factors, influencing child marriage in the state. The purpose of the study, accordingly is to identify socio-economic factors underlying high incidence of child marriage in Uttar Pradesh.

Background

The author estimated in 1979 the incidence of child marriage among females in various districts of Uttar Pradesh for 1961 and 1971 using Newton's method of forward interpolation using the census data on marital status by age and analysed patterns of its variation. That study revealed a very high incidence of child marriage in most districts of the State as also a large interdistrict variations in this incidence. In 1971, the incidence varied from a low of 21.8 per cent in Dehra Dun to as high as 80.0 percent in Basti, the average for all districts

of the State being at 50 percent, with standard deviation of 14.6, the coefficient of variation in the incidence was found to be 29.1 percent. A classification of the districts in five groups in ascending order of the incidence revealed that only in 6 out of 54 districts, the incidence was below one-third; in 10, it was between one-third to two-fifths; in 14, between two-fifths to one-half; in 15, between one-half to two-thirds; and in 9, it was more than two-thirds. The estimates of the incidence in 1961 were higher but the pattern of inter-district variation was similar. The presence of large inter-district variation in the incidence suggested that the technique of multiple regression would be appropriate for the search of factors influencing this incidence.

Another interesting finding of that study was the relation between the pattern of variation in the incidence and the level of development of the districts. When the estimates were made for four groups of districts categorised according to the level of development by the Census Commissioner on the basis of the 1961 Census data, it was revealed that the incidence of child marriage varied inversely with level of development. In 1971, the incidence was found to be the lowest at 34.28 percent in the highest development category and it consistently increased with decline in level of development to 44.76 percent in the second category, 54.14 percent in the third category and 56.79 percent in the lowest category. The pattern of variation in the incidence of child marriage by level of development was strikingly similar in 1961 when the incidence consistently increased from 45.44 percent in the highest development category to 66.67 percent in the lowest.

The analysis of district level mean age at marriage by level of development for Uttar Pradesh in another study of the author (Srivastava, 1980b) brought out positive association between the two, both in case of males and females, and for both the points of observation, namely, 1961 and 1971. The same pattern had been revealed in an analysis of female age at marriage in rural parts of various districts of the State by level of development (Srivastava, 1980a). These findings are quite consistent with the finding of inverse variation in the incidence of child marriage with level of development and lands strong support to it.

The estimates of the incidence had shown that in all the hilly districts of the state, it was quite below the state average. But six out of seven hilly districts were grouped among the districts at the lowest development level. Considering it possible that marital behaviour in these districts is influenced by features peculiar to the region related to the level of development, the above analysis of relation between the pattern of variation in the incidence and the development level was done after excluding the six hilly districts from the lowest development category. A sharper rise of the incidence was observed in the lowest category after such exclusion both in 1961 and 1971.

These findings suggest that rise in level of development has a depressing influence on the incidence of child marriage. But the Census Commissioner of

India had included a variety of factors relating to six broad features of the districts in evolving a composite index of the level of development. So it is difficult to identify specific factors among them, that play a significant independent role in influencing child marriage incidence. However, the findings do suggest that hypotheses may be tested on alternative development parameters, particularly social and economic, which are amenable to policy manipulation, in the search for significant factors influencing child marriage in the State. The finding that there may be some special features in the six hilly districts, influencing their marital behaviour suggests that it is better to exculde these districts from this search. Thus the present study of determinants of child marriage is confined to 48 out of 54 districts of the State.

Analytical Framework, Data and Methodology

Like any other human decision, decision regarding early marriage of girls is likely to be taken on rational consideration of the relative costs and benefits of the preferred course of action, except in cases where such decision is based purely on traditional beliefs and practices. In Indian situation, the role of traditions favouring early marriage does exist, particularly among illiterate masses in rural areas of the country. However, even in cases where traditions have influence, cost and benefit calculations do enter the decision-making process to some extent. Gradually, the influence of traditions is diminishing with the spread of education and other modernisation processes. Therefore, a study of the determinants of child marriage can be done within the framework of cost-benefit analysis. The researchers in the field have used similar framework in their studies. Sklar explains marital decision and age at marriage primarily in terms of socio-economic costs and benefits involved. Fawcett (1974) studies marital decisions with the help of a socio-psychological taxonomy of benefits, costs, facilitators and barriers. Similar framework underlies the Study of determinants of age at marriage by Dixon (1971) and nuptiality investigation of Duza and Baldwin (1977).

The finding of an inverse relation of the incidence of child marriage with level of development noted in the preceding section, suggests that forces of socio-economic development turn the scales of costs and benefits against early marriage and create motivation for marital postponement. The present study will, therefore, focus primarily on selected socio-economic development factors in a cost-benefit framework. The selected factors and variables associated with them used as explanatory variables together with a set of pertinent hypotheses are given below. It may be mentioned, *inter alia*, that the present selection of variables is based on the findings of another study (Srivastava, 1982), wherein the relative influence of several variables on female mean age at marriage was scrutinised for their significance in this regard. The variables identified in that study

have been selected for the present study on the assumption that the variables having larger influence on mean age at marriage may have equal relevance for incidence of child marriage.

A. Education

Education tends to free human mind from the influence of old and irrational traditions and enables people to take decision on rational considerations. It helps them to realise the cost of child marriage in terms of danger to health and life of the mother and the child which the start of procreation in immature stages involves. It has impact on their perception and effects related changes in their actual desires and motivations. It directly provides an alternative to early marriage in the form of school attendance and indirectly in the form of employment opportunities in non-traditional sectors. Thus, it enhances the cost of child marriage and the benefits of marital postponement. In view of this, it is hypothesized that educational development has a negative influence on the incidence of child marriage.

For testing the hypothesis regarding educational development, district level data on two variables computed from 1961 and 1971 censuses have been used: (i) 'percent females literate' which is taken to represent horizontal expansion of education and (ii) 'percent females in junior high school and above/primary and above' which is taken to represent vertical expansion of education. In the absence of data on 'junior high school and above' in 1961 census, data on 'primary and above' have been used for 1961, while data on the former have been used for 1971.

It is thought that transition from massive illiteracy to even elementary literacy represents a significant change and activates a whole chain of modernisation effects having a positive impact on female marital postponement (Duza and Baldwin, 1977) and a depressing influence on the incidence of child marriage. In view of the fact that modernising influences initiated by a change from illiteracy are likely to be deepened and consolidated by rise in level of education (besides the fact that longer schooling necessitates longer marital postponement), it is hypothesized that higher level of education has a larger negative influence on the incidence of child marriage than relatively lower level of education or simply literacy status, through its larger impact on cost-benefit scale against child marriage.

B. Urbanisation

Urbanisation generates modernising influences, which have extensive impact on people's perception, desires and motivation. It reduces greatly the influence of traditions. Urbanisation increases cost of living and inhibits family forma-

tion before a couple becomes self-supporting. It provides to females larger opportunities of non-familial roles. Moreover, most of the employment opportunities available in urban areas require acquisition of certain level of education and skills, which makes marital postponement necessary. Thus, urbanisation is hypothesized to exercise a depressing influence on the incidence of child marriage through its various influences, which increase the cost of child marriage and benefits of marital postponement.

For testing the above hypothesis regarding urbanisation, district level data on 'percent urban population', computed from 1961 and 1971 censuses, has been used in the analysis.

C. Income Level

Income level of a population has an impact on its living standards, which in turn influence people's aspirations, desires and motivations in a way that cost-benefit scale tends to be turned against child marriage. Accordingly, it is hypothesized that income level is negatively related with child marriage incidence.

In the absence of district level data on per capita incomes for Uttar Pradesh for the two points of observation, namely, 1961 and 1971, district level data on 'per hectare agricultural yield' at constant prices based on three year average around 1961 and 1971 has been used. It has been taken from a research study on "Dynamics of Rural Transformation—The Case of Uttar Pradesh" being conducted by A. K. Singh in the Department of Economics, Lucknow University. It is expected that this variable is a good proxy for per capita income in view of the fact that agricultural productivity is likely to influence all round income level of the population not only because U.P. districts are predominantly agricultural but also due to the fact that higher agricultural productivity reflects development impulses running through the entire population of the district.

D. Female Participation in Agriculture

Since the tradition-bound agricultural milieu is best represented by female participation in agricultural activities, it creates a strong economic motivation for child marriage. In view of this, female participation rate in agricultural activities is hypothesized to exercise a positive influence on child marriage incidence by enhancing the perceived benefits from such marriages.

For testing this hypothesis district level data on 'percent female population engaged in agriculture', computed from 1961 and 1971 censuses, have been used in the analysis.

E. Development of Non-agricultural Sector

This factor is a substitute for industrial development and has been considered

here in view of a very low level of industrial development proper in most of the districts of Uttar Pradesh. The development of non-agricultural sector implies a shift of labour force from traditional to non-traditional sectors, which has a great influence on people's perception and attitudes. Besides, participation in most of these sectors presupposes acquisition of certain level of knowledge and skills, which makes marital postponement necessary. In view of this, development of non-agricultural sector is hypothesized to exercise a depressing influence on the incidence of child marriage by increasing the opportunity cost of such marriages.

For testing the above hypothesis, two explanatory variables have been selected for the analysis : (i) 'percent female population engaged in non-agricultural sectors', (ii) 'percent male population engaged in non-agricultural sectors'. The data for these two variables were computed from the 1961 and 1971 censuses.

Methodology

The hypotheses will be tested with the help of linear multiple regression analysis using district level data on the incidence of child marriage for 48 districts of Uttar Pradesh in 1971 and 1961 as dependent variable and selected socio-economic variables noted above for the two points of observation as explanatory variables. For avoiding the serious problem of multi-collinearity which might distort individual regression coefficients, all these explanatory variables can not be used in one regression function, if some of them are found to be having high intercorrelations, which is quite expected in case of socio-economic variables. For reliability of the findings, coefficients of multiple determination (R^2) will be tested for goodness of fit of the equations using *F* test and regression coefficient will be tested for significance using *'t'* test. Moreover, these coefficients will be compared for the two points of observation and their matching will be taken to strengthen further the reliability of the findings besides showing their stability over-time.

Formulation of Model

In order to formulate alternative multiple regression functions for explaining inter-district variation in the dependent variable in 1971 and 1961 with the help of selected explanatory variables for the corresponding years, the relationship of the variables recapitulated below has to be studied.

Dependent Variable

y = Incidence of child marriage (female).

Explanatory Variables

X_1 = Percent females literate

X_2 = Percent females junior high schools and above/primary and above (the latter for 1961)

X_3 = Percent urban population

X_4 = Per hectare agricultural yield

X_5 = Percent female agricultural workers to female population

X_6 = Percent female non-agricultural workers to female population

X_7 = Percent male non-agricultural workers to male population.

The data on inter-district variation in the dependent and explanatory variables for the two points of observation are presented in Table 1.

TABLE 1—INTER-DISTRICT VARIATION IN DEPENDENT AND EXPLANATORY VARIABLES—1961 AND 1971

Variables	*1961*		*1971*	
	Mean	*Standard deviation*	*Mean*	*Standard deviation*
Dependent :				
7 Child Marriage incidence	61.34	12.93	51.42	14.73
Explanatory :				
X_1 % females literate	7.43	4.57	10.77	5.63
X_2 °o females junior high-school and above/primary and above	2.00	2.06	2.56	2.55
X_3 %, Urban population	1333	11.23	14.16	11.43
X_4 Per hectare agricultural yields (Rs)	566.47	117.42	739.14	197.06
X_5 % females in agriculture	12.68	10.78	450	407
X_6 % females in non-agricultural sectors	2.95	1.46	0.84	0.55
X_7 % males in non-agricultural sectors	16.08	7.75	12.11	6.57

For identifying alternative regression functions to be run for the two points of observation, the interrelationships among the above variables are computed in terms of zero-order correlation coefficients. The matrices of these coefficients for 1971 and 1961 are given below in Tables 2.A and 2.B.

TABLE 2.A—ZERO-ORDER CORRELATION COEFFICIENT MATRIX : INCIDENCE OF CHILD MARRIAGE AND SELECTED EXPLANATORY VARIABLES-1971

Variables	*Y*	*X1*	*X2,*	*X3*	*X4*	*X5*	*X6*	*X7*	
Y Incidence of child marriage	1.000								
Xi % females literate	—.582	1.000							
Xz % females junior high school and above	—.635	.914	1.000						
X3 % urban population	—.659	.843	.898	1.000					
X4 Per hectare yield (Rs)	—.601	.176	.163	.208	1.000				
X5 % female agricultural workers	.666	—.281	—.297	—.375	—.601	1.000			
Xe % female non-agricultural workers	—.251	.727	.732	.645	—.085	.162	1.000		
X-, % male non-agricultural workers	—.664	.888	.908	.940	.281	—.261	.757	1.000	

TABLE 2.B—ZERO ORDER CORRELATION COEFFICIENT MATRIX : INCIDENCE OF CHILD MARRIAGE AND SELECTED EXPLANATORY VARIABLES—1961

Variables	*Y*	*X1*	*X2*	*X3*	*X4*	*X5*	*X6*	*X7*
Y Incidence of child marriage	1.000							
Xt % females literate	—.587	1.000						
X2, % females primary and above	—.620	.943	1.000					
X3, % urban population	—.640	.862	.853	1.000				
X4 Per hectare yield	—.651	.095	,074	.118	1.000			
X5 % female agricultural workers	.760	—.320	—.291	-.418	—.684	1.000		
X6 % female non-agricultural workers	.092	.258	.190	.145	—.097	.373	1.000	
X7 % male non-agricultural workers	—.709	.827	.791	.873	.296	—.383	.413	1.000

A scrutiny of the 1971 correlation coefficient matrix reveals that among the explanatory variables, variable X_1 is highly correlated with variable X_2, X_3 and XT Similarly, variable X_2 is highly correlated with variable X_3 and X_7 and variable X_3 is highly correlated with variable X_7. Correlation matrix for 1961 also reveals more or less the same pattern of relationship and no variables besides the above are seen to be highly correlated. Therefore, to avoid the problem of serious multi-collinearity, mentioned above, an attempt is made to formulate alternative regression functions for testing the hypotheses in such a way that explanatory variables with high inter-correlations do not occur in the same equation. In the light of the above, following four linear multiple regression functions have been formulated to be fitted to the data for both the points of observation.

$$\text{I } y = \alpha + \beta_1 X_1 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6$$

$$\text{II } y = \alpha + \beta_2 X_2 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6$$

$$\text{III } y = \alpha + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6$$

$$\text{IV } y = \alpha + \beta_4 X_4 + \beta_5 X_5 + \beta_7 X_7$$

Where a is unknown constant and B[8] are unknown coefficients.

Results and Discussion

The results obtained by fitting the alternative regression functions to the data for 1971 and 1961 are given respectively in Tables 3A and 3B.

The fitting of the alternative regression functions to the data on incidence of child marriage in 1971 and 1961 gives good fit in all cases with highly significant explanatory power. The four alternative functions could explain from 67.7 percent to 73.1 percent inter-district variation in child marriage incidence in 1971 and from 77.2 percent to 81.3 percent variation in this incidence in 1961 with highly significant *F* values in all cases. The findings on individual variables are discussed below.

Education

Educational development has been hypothesized above to exercise a negative influence on child marriage incidence through its various influences turning the cost-benefit scale against child marriage. In conformity with the hypothesis, both the variables taken as indices of educational development, namely, 'percent females literate' (X_1) and 'percent females junior high school and above/ Primary and above' (X_2) are found to exercise independent and statistically sig-

TABLE 3.A—RESULTS OF REGRESSION ANALYSIS : INCIDENCE **OF CHILD MARRIAGE AND SOCIO-ECONOMIC** VARIABLES—1971 *(N* = 48)

Equation Number	*Constant*	*% females literate*	*% females junior high-school and above*	*% urban population*	*Per hectare yield*	*% female agricultural workers*	*% female non-agricultural workers*	*% male non-agricultural workers*	R^2	F
		$X_1X_2X_3$			X_4	X_5	X_6	X_7		
I	73.948*	—0.942* (—2.310)			—0.023** (—2.913)	+ 1.421*** (3.095)	—2.099 (-0.521)		.677	22.532
II	71.256		—3.182*** (—3.683)		—0.025*** (—3.366)	+ 1.058* (2.405)	+2.046 (0.532)		.724	28.199
III	73.453			-0.581*** (-3.219)	—0.024*** (-3.234)	+ 1.111** (2.418)	—0.987** (—0.282)		.707	25.939
IV	70.304				—0.016* (—2.284)	+ 1.468*** (4.118)		—1.111*** (—6.049)	.731	39.856

NOTE : Figures in parenthesis are *'t'* values corresponding to regression coefficients.
•Significant at 5% *(P* < .05).
**Significant at 1% (P < .01).
***Significant at 0.1% (P < .001).

TABLE 3.B—RESULTS OF REGRESSION ANALYSIS : INCIDENCE OF CHILD MARRIAGE AND SOCIO-ECONOMIC VARIABLES—1961 *(N* = 48)

Equation Number	*Constant*	*% females literate*	*% females primary and above*	*% urban*	*Per hectare yield*	*% female agricultural workers*	*% female non-agri-cultural workers*	*% male non agri-cultural workers*	R^{2}	*F*
		X_1	X_2	X_3	X_4	X_5	X_6	X_7		
I	86.928	—1.274*** (—5.018)			-0.040*** (—3.364)	+ 0.424** (2.723)	+ 0.363 (0.440)		.772	36.399
II	89.342		—3.075*** (-6.512)		—0.040*** (—3.851)	+ 0.436**** (3.268)	0.128 (0.183)		.813	46.737
III	89.003			—0.551*** (—5.287)	-0.044*** (—3.749)	+0.335* (2.082)	+0.160 (0.204)		.781	38.337
IV	81.174				—0.024* (-2.388)	+0.514*** (4.564)		-0.804*** (-6.715)	.807	61.326

NOTE : Figures in parenthesis are '*t*' values corresponding to regression coefficients.
*Significant at 5% *(P* < .05).
**Significant at 1% *(P* < .01).
***Significant at 0.1% *(P* < .001).

nificant negative influence on the incidence of child marriage (Y) in 1971 as well as in 1961. It means that both the indices of educational development have negative influence on the incidence of child marriage even when the influence of other explanatory variables in the model on the dependent variable (Y) is controlled.

In addition to the negative influence of horizontal expansion of educational development, the vertical expansion of education was also hypothesized to have a negative influence on the incidence of child marriage. The hypothesis has been tested by comparing the influence of higher level (X_2) with relatively lower level *(X_1)* of education on the dependent variable (Y). In conformity with the hypothesis, the negative influence of the former is seen to be larger than that of the latter in whatever way the comparison is made. The results show that taking other explanatory variables constant, mere substitution of higher level of education *(X_2)* for relatively lower level (X_1) in the regression equation (II) raises explanatory power *(R_2)* of the model from 67.7 percent to 72.4 percent in 1971 and from 77.2 percent to 81.3 percent in 1961. It means that higher level of education explains inter-district variation in the incidence of child marriage to a larger extent than female literacy does. The same finding is given by comparison of the magnitudes of regression coefficients or their significance level (V values) pertaining to X_2 and X_1 where in the former *(X_2)* is seen to have a relatively higher coefficient as well as significant level than the latter both in 1971 and 1961. The computation of partial correlation coefficient also shows that the coefficient of X_2 with F is comparatively larger both in 1971 *(r_{2y}* .456 = .437) and in 1961 *(r_{2y}* .456 = .705) than the corresponding coefficients of X_1 with *y,* which are r_{1y} .456 = .332 for 1971 and r_{1y} .456 = .608 for 1961. It conclusively demonstrates the larger independent influence of higher level of education as well as suggests the influence of vertical expansion of female education.

The exact matching of the above two findings showing a strong negative influence of female education on the incidence of child marriage at two points of time ten years apart, i.e. 1971 and 1961, not only gives further support to the findings but also indicates the stability of this influence overtime. In the earlier study of the determinants of mean age at marriage both these dimensions of educational development were found to exercise highly significant positive influence of marriage ages of both sexes at the same two points of time. These findings are consistent with those of the present study and lend strength to them.

Urbanisation

In line with the hypothesis stated earlier, 'percent urban population' *(X_3)*, taken as index of urbanisation, is found to have an independent and highly significant negative influence on child marriage incidence both in 1971 and 1961.

The matching of this finding at two points of time demonstrates the stability of the hypothesis. Further, this finding is consistent with the earlier finding of a highly significant positive influence of urbanisation on marriage ages.

Income Level

In accordance with our hypothesis, 'per acre agricultural yield' *(X_4,)*,taken as a proxy variable for income level, is seen to exercise an independent and highly significant negative influence on child marriage incidence *(Y)* in all the four alternative regression functions both for 1971 and 1961. The exact matching of this finding in all the alternative regression functions and for both points of time lends a strong support to the finding besides showing its stability over time. This finding of negative influence of income level on the incidence of child marriage is consistent with the finding of the earlier study on age at marriage.

Female Participation in Agriculture

In conformity with our hypothesis, 'percent female agricultural workers to female population' *(X_5)*, representing female participation rate in agriculture, is found to exercise an independent and highly significant positive influence on child marriage incidence *(Y)* in all the four alternative regression functions pertaining both to 1971 and 1961. While agricultural development is found to exercise a strong negative influence on child marriage incidence in the State, female participation in agriculture, controlling for agricultural development, is seen to exert a strong positive influence on this incidence. The contancy of this finding in all the alternative regression functions for both the points of time gives a strong support to this finding besides reflecting stability of the influence over time. The finding is quite consistent with the finding of highly significant negative influence of this variable on ages at marriage.

Female Participation in Non-agricultural Sector

Female participation in economic activities of non-agricultural sectors' was hypothesized to exert a negative influence on the incidence of child marriage through various influences that such participation presupposes and generates. However, testing of this hypothesis using 'percent female non-agricultural workers to female population' *(X_6)* representing female participation rate in non-agricultural activities does not bring out any consistent or statistically significant influence on child marriage incidence *(Y)*. In some regression functions, the sign of the coefficient is negative and in others, it is positive but the mere fact that in all equations the coefficients are statistically insignificant, suggests that no meaning could be attached to these coefficient signs. Possibly, it is due to

very low level of participation of females in these activities in Uttar Pradesh. This variable may assume some clear pattern of relationship with child marriage incidence only after such participation by females reaches a certain minimum level.

Male Participation in Non-agricultural Activities

In conformity with our hypothesis, 'percent male non-agricultural workers to male population' (A^1,), reflecting male participation rate in non-agricultural activities, is seen to exercise an independent and highly significant negative influence on the incidence of child marriage in 1971 as well as 1961. The matching of this finding at two points of time imparts strength to the finding besides indicating its stability over time. Moreover, this finding is consistent with the finding of a highly significant positive influence of this variable on ages at marriage.

Summary of Findings and Policy-implications

Female educational development, both horizontal and vertical, is an important determinant of the incidence of child marriage among females in Uttar Pradesh. It suggests that expansion of female education forms an essential part of the strategy of early removal of child marriage incidence in the State. Further, the programme of increasing female education should not only be confined to increasing proportion of literate females but emphasis should also be given to increasing level of their education, which is expected to have a larger depressing influence on this incidence.

Urbanisation exerts a significant negative influence on the incidence of child marriage in Uttar Pradesh. The spread of urbanisation, which provides to females larger opportunities for non-familial roles and whose modernising influences help remove the impact of traditions, will tend to reduce this incidence.

Income level of a population, as proxied by agricultural productivity, exercises a significant negative influence on child marriage incidence. Besides the general measures of economic development, being taken in the State under various development Plans, the study suggests the need for special measures aimed at removing chronic poverty in some districts, particulary in eastern Uttar Pradesh and for emphasis on developing and modernising agriculture in view of the fact that the service is the mainstay of population in these districts.

The participation rate of females in agricultural activities is found to provide a Strong economic motivation for child marriage. For the short run, the finding suggests the need for special programmes of social education aimed at creating awareness about the bad effects of child marriage, particularly in areas with heavy concentration of such females. In the long run, however, measures will have to be taken for shifting females away from agriculture through education and training and creation of employment opportunities outside agriculture.

Male participation rate in non-agricultural sectors, as a proxy variable for industrial development, exercises a strong negative influence on child marriage incidence. The development of these sectors with emphasis on industrial sector proper would rapidly reduce the incidence of such marriages by creating strong motivation against them in various ways.

Acknowledgement

This study forms part of the research programme of the Population Research Centre, Department of Economics, Lucknow University, Lucknow. The author is indebted to Prof. N. N. Shrivastava, Director and Dr. D. N. Saksena, Assistant Chief of the Centre for providing necessary facilities and helpful suggestions for completing this study, to Prof. T. S. Papola, Director, Giri Institute of Development Studies, Lucknow for the use of computational facilities of the Institute and to Mr. S. K. Ghose of the Institute for help in processing of the data.

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