

Self-arranged marriages in India: exploring the association with education, regions, and cultural groups

Abstract

Self-arranged marriage is a marital arrangement in which couples choose their partners themselves, while in an arranged marriage the decision lies in the hands of parents and/or kin. In the Indian setting, the majority of marriages are still arranged by others. However, among younger cohorts, the prevalence of self-arranged marriage is increasing. Using the IHDS 2011-12 data, we adopt a multivariate and multilevel approach to explore how self-arranged marriage is associated with education, region and cultural groups in Indian society. We find that parental education is positively related to the likelihood of self-arranged marriage; both members of the lower and higher-ranked caste groups are more likely to be in a self-arranged marriage compared to the middle-ranking castes; and women living in more developed regions are more likely to have a self-arranged marriage, especially in the Northeast region.

Keywords: self-arranged marriage, education, gender, caste, regions, India.

Introduction

The fundamental difference between self-arranged and other marriages lies in the decision-making process. Self-arranged marriage is a marital arrangement in which couples choose their partners themselves, while in an arranged marriage, the decision lies in the hands of parents and/or the kin. Arranged marriages tend to be mostly endogamous, with both partners having similar ascribed characteristics by birth, such as religion, race, caste, and other ethnic identities (Dyson and Moore 1983; Allendorf and Pandian 2016). A third kind of marital arrangement is jointly arranged marriage, where the spouse's choice decision is made jointly by the bride/groom and their parents. This arrangement is not completely arranged by others or the self, but on a middle ground, jointly decided upon by the bride/groom and their parents (Allendorf and Pandian 2016).

Most scholars studied self-arranged marriages synonymously with the concepts of companionate marriages (Donner 2002), choice marriages (Tekce 2004), marriages formed by eloping for love (Allendorf 2013), autonomous marriages (Epstein et al. 2013), etc. Although all these typologies are essentially identical when addressing the agency played by individuals in their spouse choice decision, some nuances exist between these terms. By definition, all love marriages are self-arranged, but all self-arranged marriages may not necessarily be based on love. In this study, based on quantitative data, the definition of marital arrangement is simply based on the person who exercises the spouse choice decision. For the question, 'who chose your husband?' if the respondent replies 'herself', we address it as 'self-arranged'.

Historically, worldwide, marriages were arranged by adult members of the family to keep the clan intact based on socioeconomic status, communal affiliation, and other ethnic identities (Maas and Leeuwen 2005; Leeuwen and Mass 2005). To maintain the 'purity' of the family line, some societies also practiced kinship marriage. According to modernization theory, a traditionally tied society experiencing an increase in the level of development and education will challenge

kinship authority, experience individualism and freedom of choice, and open up to more modern marriage practices (Goode 1963). Most developed Western societies have followed these lines of modernization, and self-arranged marriages have become the rule. In some societies, however, arranged marriage practices are still prevalent (Dyson and Moore 1983).

Singulate Mean Age of Marriage is still quite low in India (20.8 years according to the Indian Census 2011, Bhagat 2016), and early marriages are usually arranged marriages (Desai and Andrist 2010; Das and Dey 1998). However, India is one of the most rapidly developing economies, and the question of whether cultural change has complemented this economic development, particularly in terms of modernizing marriage practices, remains insufficiently researched. To date, extensive studies have been performed in the areas of age at marriage and the “marriage squeeze”, contributing to the quantitative literature on India (Bhat and Halli 1999; Dommaraju 2009; Desai and Andrist 2010; Guilmo 2012). Although some recent studies have also been conducted on spouse choice, ethnic endogamy, and educational homogamy (Mathur 2007; Das et al. 2011; Allendorf and Pandian 2016; Ahuja and Ostermann 2016; Narzary and Ladusingh 2019; Ray et al. 2020; Lin et al. 2020; Banerji and Deshpande 2021), research on couple formation is still largely underrepresented in the existing demographic literature on India. Because of the effect of the mating process on gender equity, this field of study deserves further development and understanding. Particularly, it has been shown that arranged marriage can expose women to the risk of violence, especially when it involves a dowry (Rastogi and Therly 2006), whereas self-arranged and jointly arranged marriage seems to improve women’s agency and marital relations (Jejeebhoy et al. 2013).

The study contributes to enriching the limited literature on marriage in India with original research questions emphasizing the emancipatory role of education with respect to traditional marriage, together with the influence of cultural and regional diversity in India. Does education

favor self-arranged marriage? What is the effect of regions? Do cultural groups, such as castes and religious groups, influence marriage typology? In the following section, we begin the discussion by introducing the caste system, which is integral to Indian society, particularly in sociocultural aspects such as marriage. Then, we consider previous literature on the topic, both theoretical and empirical, and present our hypotheses. In the “data and methods” section, we present the second-round data of the India Human Development Survey 2011-12 (IHDS), together with the selected sample, the chosen variables, and the statistical methods used. In the results section, after presenting trends in self-arranged marriage, we address our research questions using a multivariate and multilevel approach at the district level. Finally, we conclude our study by considering how our findings answered our hypotheses. While presenting the limitations of our study, we discuss the implications of our results and suggest further developments for research on marriage in India.

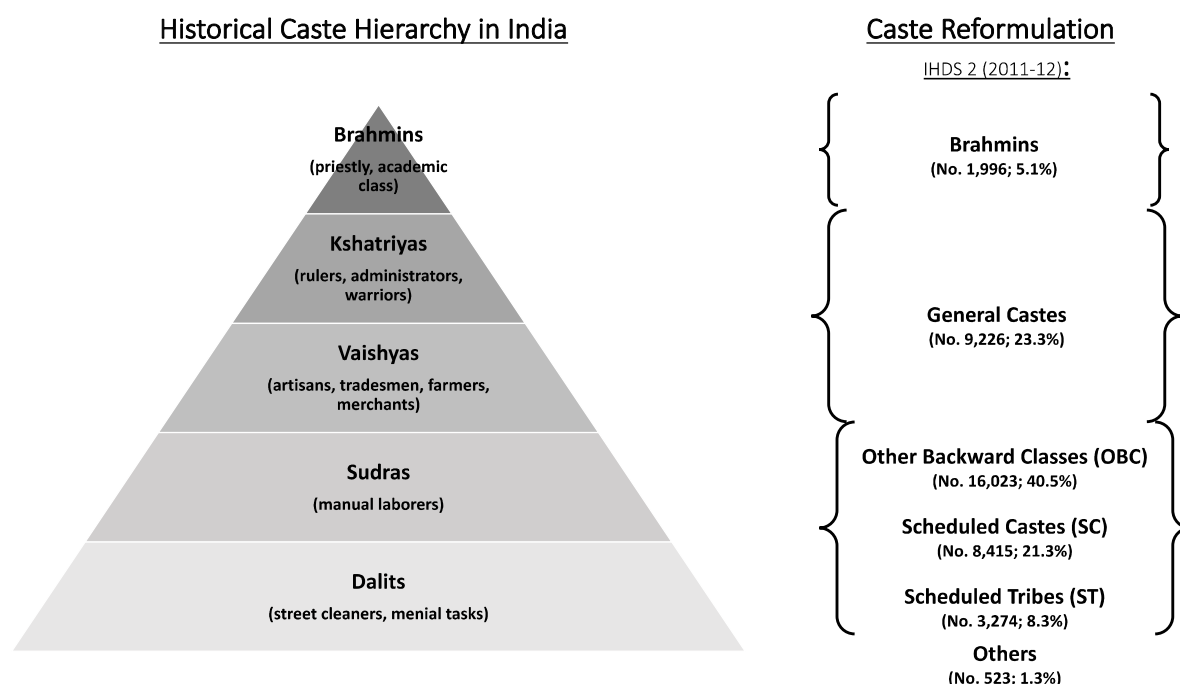
The Caste System in India

Before presenting the theoretical framework of the study, we have to introduce the caste system, an essential feature of Indian society. While the caste system is prevalent among all religions in India, it is most entrenched among Hindus, the majority religion representing approximately 80% of the total population. Historically, the caste system was a hierarchical stratification of occupation and social behavioral expectations that were assigned by birth and with boundaries that were patrilineal and uncrossable¹. Men could not alter their position within this social structure, but for women, change was possible through marriage. The caste system had four major *varnas* or groups: Brahmins (the priestly class), Kshatriyas (warriors), Vaishyas (traders or businessmen) and Sudras

¹ The caste system was characterized by several features (Velassery 2005). First, the hereditary specialization of occupations that were hierarchically superposed, mutually opposed, and resistant to change. Second, the aspect of endogamy or marriage within the same caste. Third, the restrictions on diet and food habits assigned to each caste. Fourth, the limiting of social interaction between castes. Any violation of these norms usually resulted in excommunication from the family and kin as well as the community (Deshpande 2010).

(manual laborer serving the upper castes) (Deshpande 2010). A fifth group, Dalits (untouchables), also existed and were excluded from the fourfold varna system (Kumar 2005).

Figure 1. Historical and post-independence caste hierarchies (Masood 2014).



In post-independent India, the constitution reformulated the caste groups by recognizing only the economically underprivileged groups as Scheduled Castes (SCs), Scheduled Tribes (STs), Other Backward Classes (OBCs), and General Castes (higher-caste groups), with the aim of acknowledging and uplifting the marginalized sections of society (Figure 1). According to the Indian Socio-Economic Caste Census 2011, SCs represent 22.7% of the population, STs represent 8.5%, OBCs represent 51.1% and others represent 17.8%.

The SCs and STs (the lowest castes in the caste hierarchy) have historically been cut off from mainstream Hindu society; they have lived in small close-knit communities, led a nomadic life as part of their culture, and mostly practiced matriarchal systems (Garg 1960). As a consequence, SCs and STs often experience the highest burden of social exclusion, including

educational exclusion, poverty, the lowest maternal health care utilization, a lack of occupational mobility across generations and high fertility outcomes (Banerji 2012; Ramesh 2014; Kumar and Gupta 2015; Hortaçsu et al. 2019). The OBCs were also historically oppressed castes, but socioeconomically they were better off than the SCs and STs. As such, their social ranking is higher than that of the SCs and STs but lower than that of the General castes (Garg 1960), who comprise all the other upper castes. Moreover, the traditional caste groups or *varnas* mentioned above are still easily identifiable by family lineage, place of residence, economic status and sometimes surnames. Consequently, this traditional caste system continues to influence social aspects and plays a significant role in the selection of marriage partners.

Literature review and hypotheses

Couple formation and generational change

Modernization theory, formulated by Goode (1963), predicts convergence toward the Western nuclear family under the influence of industrialization and urbanization. According to Goode, the nuclear family is compatible with the growth of job-based capitalism. Other secondary predictions of the theory concern the increasing age at marriage, the decline in fertility, and the convergence toward the Western conception of marriage as companionship. In other words, together with the diffusion of capitalism and the nuclear family, Goode predicts globalization, that is, the spread of the Western culture of personal autonomy, including affective individualism, across the globe (Good 1959; Giddens 1999; Donner and Santos 2016; Furstenberg 2019). There are no clear results regarding the verification of the main hypothesis of convergence toward the nuclear family (Bongaarts and Zimmer 2002; Niranjana et al. 2005; Buttenheim and Nobles 2009; Ruggles 2009; Cherlin 2012), also regarding India (Niranjana et al. 2005; Allendorf 2013). However, there is agreement about other secondary predictions (Cherlin 2012), and phenomena such as increasing

age at marriage and declines in fertility are observable in developing countries (Bryant 2007; Ortega 2014; Raymo et al. 2015). In relation to the topic of this study, a decrease in family control over the choice of spouse and the development of an idea of the couple as companions have also been observed (Cherlin 2012). With urbanization and industrialization, older generations no longer own land and resources, as such they might have a limited ability to affect spouse choice (Cherlin 2012). In addition to modernization and globalization theories, the diffusion of new marriage practices can follow another mechanism defined as developmental idealism: because of their economic development, Western societies could become a model, including in terms of their family practices such as self-arranged marriage (Thornton 2005; Cherlin 2012). Despite predictions of theories of modernization, globalization and developmental idealism, it has been noted that the Western path may not be followed by other societies, and a reinterpretation of global norms and practices is likely to occur (Hirsch and Wardlow 2006; Rao et al. 2013; Hatfield et al., 2020).

Empirical qualitative findings on different sociocultural settings where traditionally marriage is arranged, such as Turkey, China, India- West Bengal, Tamil Nadu, and North India, suggest that a shift is taking place. Studies set in India, in Darjeeling hills and Kolkata city in West Bengal, and in China show that individual preferences such as love, prior acquaintance, compatibility, education, and employment are becoming increasingly salient for mate selection (Allendorf 2013; Donner 2002; Donner 2016; Donner and Santos 2016). In particular, it has been shown that young, middle-class women in Kolkata embraced with enthusiasm the language of romantic love and courtship (Donner 2016), probably also as a consequence of the spread of idioms of romantic love in journals, television, films, and internet (Brosius, 2011). However, self-arranged marriage can be a source of friction within the household, while arranged marriages that integrate courtship before marriage can avoid this conflict (Donner 2016). Additionally, in other settings, such as Turkey and Tamil Nadu in southern India, marital arrangements where both individual

choice and family preferences are equally taken into account are considered ideal (Tekce 2004; Fuller and Narasimhan 2008; Fuller and Narasimhan 2013). With reference to Vadodara, Gujarat, it has been shown that the provision of parental consent is the final stage after the meeting has already taken place (Netting 2010). Online dating websites provide another example of reinterpretation of the globalizing mating norm. Some websites such as Shaadi.com are specifically for marriage, and among the usual information such as age and sex, other information such as religion and language are asked (Hatfield, 2020), indicating a more traditional approach to mating and, probably, the willingness to conform to family expectations.

The quantitative studies on the topic are more limited than the qualitative ones just discussed above. Allendorf and Pandian (2016) observed, through quantitative descriptive analysis, a decrease in arranged marriages and slight increases in self-arranged marriages and especially jointly arranged marriages. This result was confirmed by Banerji and Deshpande's (2021) multivariate analysis.

Overall, previous quantitative and qualitative findings show an increase in self-arranged marriage and jointly arranged marriage, the latter as in Indian reinterpretation of the Western norm. In line with these studies, *in our first hypothesis, we assume that the youngest cohorts are more likely to experience jointly arranged and self-arranged marriages than previous cohorts (H1).*

The effect of education on marriage

Family members tend to maintain and reproduce the family system and its underlying norms and rules (Giddens 1984). Thus, the family as a unit can influence household decision-making and marriage (Baker et al. 2000). In India, the probabilities are high that highly educated parents and parents-in-law have themselves engaged in self-arranged marriages. Thus, this underlying family norm of marital arrangement is likely to be reproduced in their children's marriage. In addition,

given the patrilocal family structure, that is, the custom of a woman living with her husband and her in-laws after marriage (Char et al. 2010; Allendorf 2013), the parents-in-law's consent to the marriage is essential for living together, communicating, and sharing the same house after marriage.

In the framework of modernization theory, we have already highlighted that urbanization and industrialization weaken the influence of older generations on spouse choice (Cherlin 2012). Proponents of developmental idealism stress that this change initially concerns the elite and most educated, and then its influence spreads to other levels of society (Caldwell 2006; Cherlin 2012). In particular, the higher educated might be more likely to be exposed to Western ideals through educational content, media, and travel (Szarota et al. 2021). This may favor preferences for the Western style of courtship and marriage, i.e., self-arranged marriage (Szarota et al. 2021). In addition, exposure to Western culture favors the appearance of nondomestic options and opportunities for educated women (Malhotra & Elnakib 2021). Hence, women's education might emancipate from the family of origin and from the arranged marriage model. Higher-educated parents and parents-in-law might also be more open to revising the family model.

Empirical evidence is in line with these theoretical reasoning. It has been shown that girls' education prevents early marriage, i.e., marriage below 18 years, according to the UN definitions. For a recent literature review on the effect of education (especially secondary education) on marriage, see Malhotra and Elnakib (2021). Consistently, it has been shown that 70.4% of upper-class youth from Dhaka in Bangladesh prefer love marriage over arranged marriage (Zahid 2007). Belonging to the upper class also increases preferences for a Western model of marriage in Pakistan (Szarota et al. 2021). By preventing early marriage, women's education is likely to prevent an arranged marriage. To our knowledge, studies directly focused on the effect of education on marital

arrangement in India are still limited, finding no effect of respondents' education on self-arranged marriage or inter caste marriage (Banerji and Deshpande 2021; Ray et al. 2020).

In considering the effect of the respondent's education on marriage, causality may pose a problem, as marriage can also affect education, especially when marrying at a young age (for more details, see the methodological section). In our study, to avoid reverse causality, parents' education serves as a better proxy for spouses' education. In addition to this methodological reasoning, there is also a substantial motivation. Ray et al. (2020) stress the relevance of parents' education in the Indian context given the larger prevalence of arranged marriage; they find that the level of education of the mother-in-law has a positive and statistically significant association with inter caste marriage. Therefore, *in our second hypothesis, we assume that the higher the educational level of parents (father and mother) and, particularly, parents-in-law (father-in-law and mother-in-law), the higher the likelihood of self-arranged marriage will be (H2).*

The effect of cultural groups

Underlying the transformation in marriage practices is the entangled set of kin, community and factors at the state level, such as gender values, patriarchal norms and the caste system, which create enough friction to prevent further changes in marital norms. In particular, religious and caste affiliations in India are known to be resilient and continually influence marriages and other social aspects (Corwin 1977; Ahuja and Ostermann 2015; Ray et al. 2020; Hortaçsu et al. 2019; Narzary and Ladusingh 2019). However, some castes can be pioneers in experiencing change. According to the developmental idealism theory discussed earlier, modern aspects of family behavior will first reach higher levels of society and then spread to other levels (Cherlin 2012). This is confirmed by Narzary and Ladusingh's study (2019), which shows that Brahmins have higher chances of inter-caste marriage than Dalits. Following this reasoning in the framework of caste hierarchy that exists

in Indian society, *in our third hypothesis, we can expect higher caste groups to show more modern behavior related to self-arranged marriage than other caste groups (H3a).*

Other findings go in the opposite direction, showing a higher prevalence of inter-caste marriage among lower castes (Ahuja and Ostermann 2019). In this respect, it has been argued that lower castes could also be interested in upward mobility through marriage (Sarkar 2022). Another possible explanation is that they have no privilege to preserve with the arranged marriage system and will display fewer norms that are associated with the mainstream Hindu system. Thus, in our third hypothesis, *we also assume that women from lower castes have a greater likelihood of choosing their husbands themselves (H3b).* In other words, we can expect a U-shaped profile, with higher- and lower-caste women being more likely to experience self-arranged marriage than women belonging to intermediate castes (the OBCs).

In addition, given the preference for consanguineous marriages among Muslims (Bittles and Hussain 2009; Allendorf and Pandian 2016), *we expect that women belonging to religions other than Islam are more likely to experience self-arranged marriage (H3c).*

The effect of regions

Given the geographical extension of India, underlying its varieties in economic, political, cultural and social contexts, the place of living is likely to influence marital arrangement to a great extent (Dhar 2013). The Indian caste system and patriarchy continue to prevail in the North region through the patrilineal and patrilocal family system (Kolenda and Haddon 1987; Jones 2010). As a consequence, the north remains the bastion of arranged marriages, together with teenage marriage (Desai and Andrist 2010; Allendorf and Pandian 2016). In the South, contradictory elements can be observed: on the one hand, the caste system has weakened, while kinship and bride prices remain

dominant (Trautman 1981; Dyson and Moore 1983). However, parental control of marriage, as well as consanguineous marriage, has declined steadily over the decades.

In addition to culture and family practices, at least two other regional factors influence the marriage process. First, in line with modernization theory, the development level of a region can directly or indirectly influence modern behavior in marriage practices. Using the social development index, a study confirmed the existence of a stark north–south divide in social development among Indian states (Kumar and Rani 2019). Second, state-level institutions within regions directly influence marriage policies. For example, the central government (in Delhi in North India) provides an incentive of two-and-a-half lakh Indian rupees (approximately 3000 euros) to every marriage involving any one partner belonging to SC that is registered under the Hindu Marriage Act (Dr. Ambedkar Foundation 2020). This scheme is called the ‘Dr. Ambedkar scheme for social integration through inter-caste marriage’ (Ambedkar 1936). The incentive amount varies by state: some states have an upper income limit, some other states give higher incentives, in particular Western states, and other states have differential incentives by the type of marriage (Hortaçsu et al. 2019). Through these policies, states aim to reduce caste-based prejudice and discrimination and encourage modern marriages or exogamy. *In our fourth hypothesis, we assume that women living in more developed regions have a higher probability of self-arranged marriage than women living in other regions (H4).* As we showed above, in these regions, castes and/or the patriarchal system have weakened, and/or antidiscrimination policies are more likely to be implemented.

Data and Methods

In this study, we use data from the second round of the IHDS in 2011-12, which was jointly conducted by researchers from the University of Maryland and the National Council of Applied Economic Research (NCAER), New Delhi. This is the only available nationally representative sample survey that provides detailed information on marriages in India. Information was collected from 42,152 households across 384 districts, 1,503 villages and 971 urban neighborhoods in India, covering topics such as health, education, employment, economic status, marriage, fertility, gender relations, social capital, village infrastructure, wage levels, and panchayat composition. In our study, we use data from the eligible women file, which provides information on 39,523 ever-married women above 15 years of age. Information on spouse choice is available for 39,459 women. We restricted our study to women with a first marriage history and women in the 15-50-year-old age group, thus reducing the sample size to 35,830 women. Furthermore, we exclude 284 women because they lack information on key variables. Thus, our final sample size is reduced to 35,546 ever-married women.

The spouse choice variable is based on the question, ‘Who chose your husband?’ The answers are as follows: respondent herself, respondent along with her parents and other relatives, only parents and other relatives and others. For the first part of our analysis, we explore self-arranged marriage as a dichotomous variable, with ‘self-arranged marriage’ coded as (1) and ‘not self-arranged marriage’, including all other choices, coded as (0). In the final part of our analysis, our dependent variable is categorical, and ‘self-arranged marriage’ is coded as (1), ‘jointly arranged marriage’ is coded as (2) and ‘arranged marriage’ is coded as (3).

Our main explanatory variables are birth cohort, cultural group (caste and religion), region and parents’ and parent-in-law’s education level. The IHDS dataset is also important for sociocultural studies since it is the first to provide additional information on Brahmins. In the Indian constitution, Brahmins are considered under the General Caste category. However, because of their

superior social status over all other caste groups since time immemorial, they may have different demographic characteristics; thus, it is important to identify them. In our study, we consider all available cultural groups: Brahmins, Forward/General Castes, OBCs, SCs and STs, which all pertain to the Hindu religion, as well as Muslims and Others (Christians, Sikhs, and Jains). Regarding the regions of India, we employ the classification presented in Table 1.

Table 1. Classification of Indian States into Regions.

REGION	STATES
North	Delhi, Haryana, Himachal Pradesh, Jammu and Kashmir, Punjab, Chandigarh, Uttarakhand, Uttar Pradesh, Jharkhand and Bihar.
Northeast	Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura.
Central	Madhya Pradesh, Rajasthan and Chhattisgarh.
East	Odisha and West Bengal.
West	Goa, Gujarat, Maharashtra, Daman and Diu, and Dadra and Nagar Haveli.
South	Andhra Pradesh, Karnataka, Kerala, Tamil Nadu and Puducherry.

In our study, we are interested in the effect of education on marriage. However, marriage could also affect education, especially in a context such as India, where marriage can occur at an early age (see previous sections). A quantitative study by Mukhopadhyay (2008) based on 204 women from the Malda district of West Bengal shows that only 47% of women could complete their education satisfactorily after marriage. Similarly, other studies illustrate that early marriage is usually related to education cessation (Jafarey et al. 2020; Delprato et al. 2015; Nguyen and Wodon 2014), while delaying marriage increases women's education (Dhamija and Roychowdhury 2020). Responsibilities associated with the birth of a child are likely to represent barriers to women's education after marriage (Lloyd and Mensch 2008). Husbands or in-laws might also be against the bride continuing education (Omoeva and Hatch 2020). Qualitative studies find

evidence for India regarding the negative effect of family responsibilities and the influence of in-laws (Ray et al. 2020; Dutta 2016). Although causality can hardly be established with a qualitative approach, their results are in line with the quantitative literature shown above. Moreover, they indicate that the perception of an adverse effect of marriage on education exists in the Indian context; thus, by anticipating these adverse effects, women can renounce pursuing their studies after marriage. Another factor to be considered in the Indian context is the *gauna* tradition, which is the event that marks the consummation of marriage by the bride moving into her marital home with her husband. When marrying at low ages, it is often the case that the marriage ceremony takes place years before the *gauna*. Thus, during this period (after the marriage ceremony and until *gauna*), women may (or may not) continue their education from their natal home (Ray et al. 2020). Accounting for these studies, showing continuation or interruption of education after marriage, we could conclude that, in addition to the effect of education on marriage that we presented in the literature review section, the reverse effect of marriage on education is also possible. The possibility of reverse causality makes the use of the respondent's education as an explanatory variable problematic and explains our choice to choose parents' and in-laws' education.

We also add other variables to our model, such as age at marriage and childhood place of residence, which can act as intermediate variables of the main explanatory variables. In other words, regions, cultural groups or education of parents and parents-in-law can affect the marriage type indirectly via the age at marriage and the probability of remaining in the same place of residence as childhood.

We start our analysis by examining the trend of self-arranged marriage over time (birth cohorts) by cultural group, region and educational level of parents and parents-in-law. We then conducted a multivariate analysis allowing us to account for confounding variables. For example,

the region and the caste, beyond being explanatory factors of interest, can also act as confounders of the relation between education and arranged marriage, making this relation partially fictive if not taken into consideration in the model.

In our data, 35,546 women are nested in 373 districts, and the average size of each district is 94. Therefore, we use a multilevel logistic model to reduce bias in standard errors and p-values for the group-level effects (Nezlek and Zyzniewski 1998). This approach also allows us to take into account group-level unobserved heterogeneity, which is often underestimated in a normal logistic regression model (Nezlek and Zyzniewski 1998). In other words, some unobserved variables at the district level could affect both the explanatory and the dependent variables.

We conduct a stepwise analysis in which we first examine the effect of each explanatory variable (birth cohort, cultural group, region and education level of parents and parents-in-law) on the dependent variable (models 1 to 4). In model 5, we account for all the explanatory variables together. In model 6, we also account for age at marriage and childhood place of residence.

Furthermore, we run an additional model with a multilevel multinomial logistic model, taking into account a categorical dependent variable distinguishing self-arranged marriage, jointly arranged marriage, and arranged marriage. For the estimation, we use generalized structural equation modeling (GSEM) in Stata (Palmer and Sterne 2015). This model allows us to run a two-level regression model (observations nested in districts) of the multinomial dependent variable (self-arranged marriage, jointly arranged marriage and arranged marriage) to assess the change in the log odds of self-arranged marriage and jointly arranged marriage relative to the reference category, i.e., arranged marriage.

Results

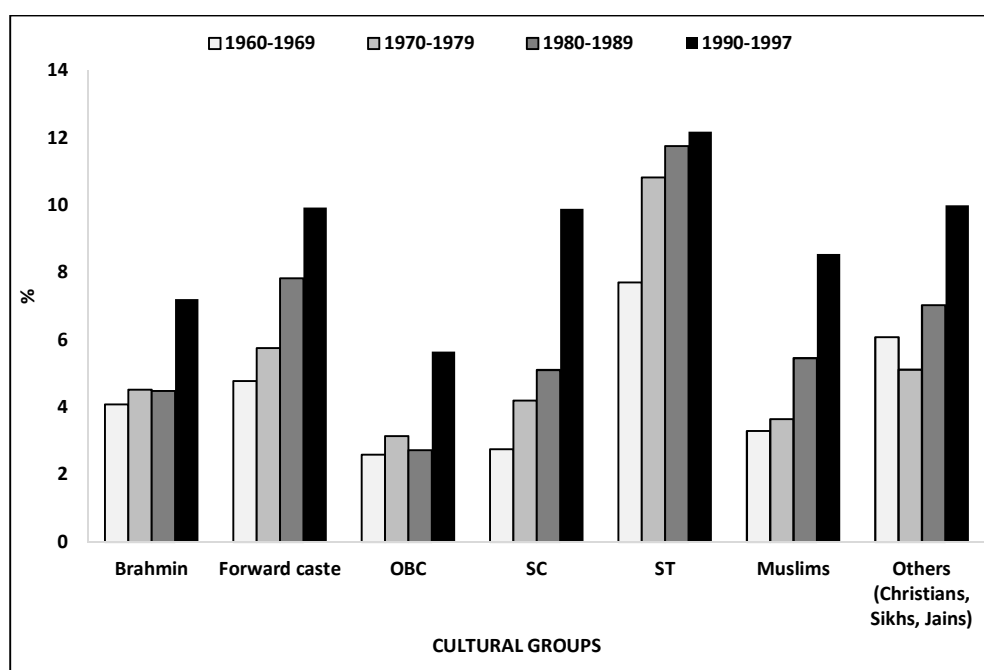
Descriptive Results

Overall, self-arranged marriage represents 5% of all marriages, jointly arranged marriage represents 22% and arranged marriage represents 72.9%. These figures are in line with previous findings from Ray et al. (2020). The Northeast shows the highest levels of self-arranged marriage (32.8%), followed by the East (7.3%, Table A1 in the Appendix).

Although self-arranged marriage remains a marginal spousal arrangement in India, the practice has more than doubled in female birth cohorts, from 3.7% for the 1960-1969 cohort to 8.6% for the 1990-1997 cohort, indicating a total increase of approximately 4.9% (Table A1). Although other kinds of spousal arrangements, such as jointly arranged marriages or arranged marriages, are more commonly practiced than self-arranged marriage, these practices have increased by only 1.1% and decreased by -5.9%, respectively, across cohorts (Table A1 in the Appendix). Thus, a clear increasing trend of self-arranged marriages over generations is found. This justifies our choice to focus especially on self-arranged marriage in this study. Table A1 also shows that a major increase was observed for the youngest generation (1990-1997).

Regarding castes, STs caste presents the highest proportion of self-arranged marriage (10.7%). Concerning education, parents-in-law's education is more strongly associated with self-arranged marriage, particularly when both have higher education (10.8%). Finally, as expected, the descriptive analysis shows that self-arranged marriages are more frequent at higher ages at marriage (25 years old and more) and with residence in the same village of childhood, a circumstance that may favor a longer acquaintance with a potential partner.

Figure 2. Self-arranged marriage trends by birth cohorts and cultural groups.



Source: Own computations, IHDS 2011-12.

All cultural groups (castes and religions) showed an increase in self-arranged marriages across all birth cohorts, with the highest increase observed for the latest cohort of 1990-1997 (Figure 2). Among Hindus, STs show the highest practice of self-arranged marriages across all birth cohorts, while OBCs show the lowest levels. Moreover, the increase in self-arranged marriage among the youngest cohort of Brahmins is quite limited. Focusing on the latest cohort, other castes and other religious groups have intermediate levels of self-arranged marriage.

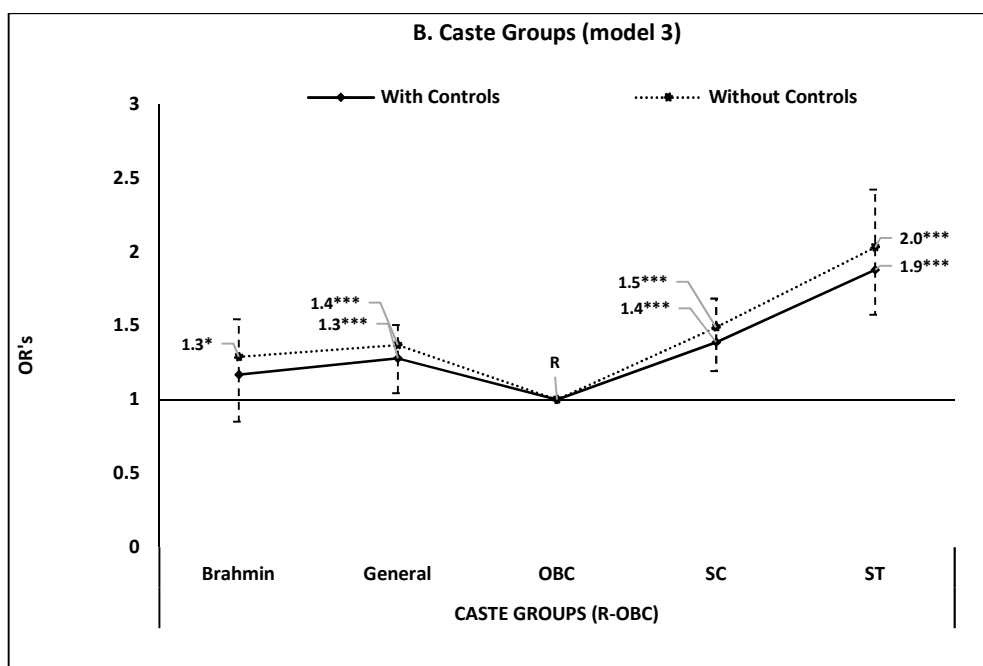
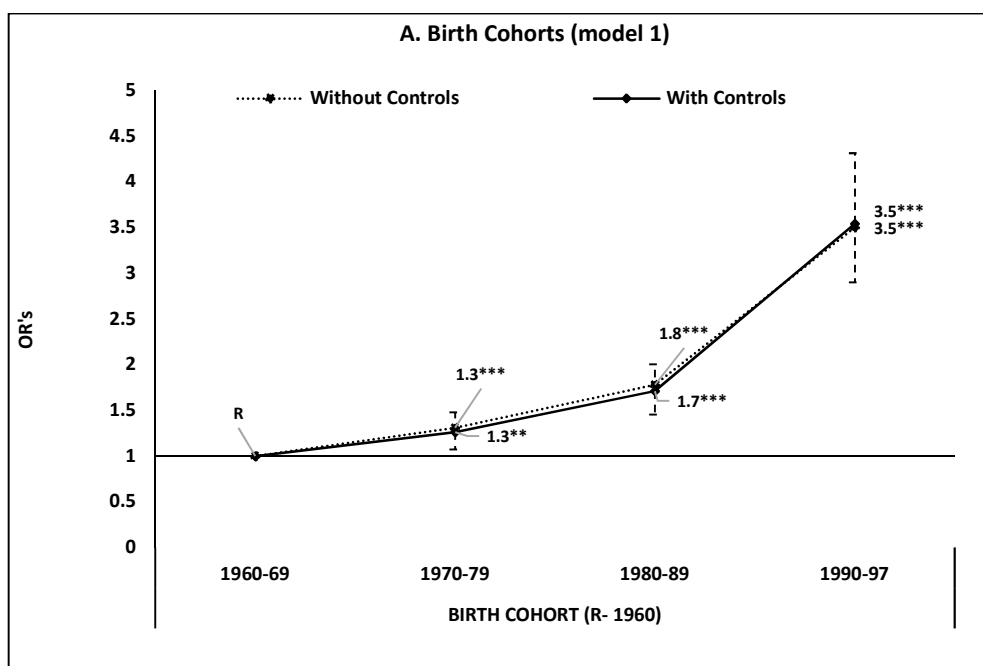
Multilevel Logistic Regression Model Results

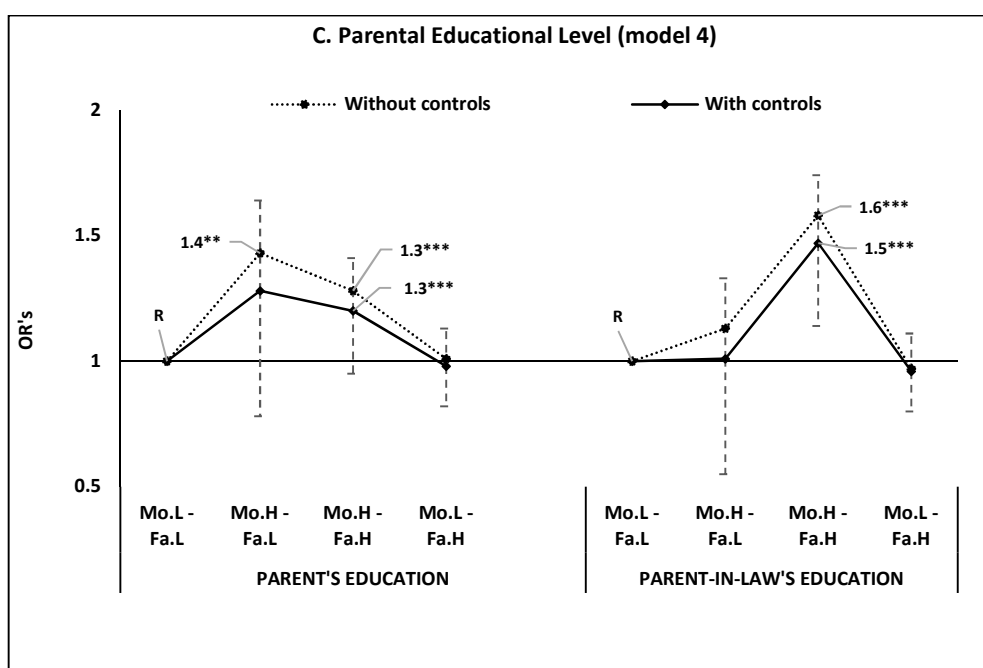
First, we estimate a multilevel logistic regression model adding our single variables, mostly confirming our descriptive results. In our first model, we observe that the youngest cohort, born in 1990-1997, is approximately three-and-a-half times more likely to have a self-arranged marriage than older cohorts (Figure 3A, and model 1 in Table A2 in the appendix). In our second model (model 2 in Table A2 in the appendix) by region, we find that self-arranged marriages are

significantly more likely to occur in the Northeast region ($OR=57.09$, $p<0.01$) than in the Central region, followed by the East region ($OR=4.65$, $p<0.01$). The South, the most developed region in the country, shows a greater likelihood of self-arranged marriages than the North and West, but overall, it does not have the highest likelihood of self-arranged marriage in the country.

In our third model by cultural group (Figure 3B, and model 3 in Table A2 in the appendix), the lowest caste groups in the Hindu hierarchy, STs and SCs, showed higher odds of having a self-arranged marriage than the OBCs ($OR=2.03$, $p<0.01$ for the STs and 1.49 , $p<0.01$ for the SCs). Especially for STs, the OR is statistically and significantly different from other groups (confidence intervals do not overlap). The highest-caste groups, Brahmins and Forward/General Castes, are more likely to have self-arranged marriages than OBCs and Muslims but are less likely than STs and SCs. Among non-Hindus, other religious groups, such as Christians, Jains and Sikhs, together are more likely to experience self-arranged marriages than Muslims and most Hindu castes (except STs).

Figure 3. Multilevel logistic regression model for self-arranged marriage among ever-married women aged 15-50 (odds ratios)





Source: Own computations, IHDS 2011-12. Note: Dependent Variable: 1= Self-arranged marriage, 0=Not self-arranged marriage. Error bars represent confidence bands for the final model 5 (all controls). *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

In our fourth model (Figure 3C and model 4 in Table A2 in the appendix), where we take into account the education level of parents and parents-in-law, we observe that when both mother-in-law and father-in-law have high educational levels, the OR is equal to 1.58 ($p < 0.01$). This result is significantly different than when the mother-in-law has a low education and the father-in-law a high education (the confidence intervals do not overlap). Concerning respondents' parents, high education of mothers combined with low education of fathers leads to higher chances of self-arranged marriage (OR=1.43, $p < 0.01$), together with the high-high combination (OR=1.28, $p < 0.01$), although in this case confidence intervals overlap.

When we estimate a fifth model (model 5 in Table A2 in the appendix) including all the explanatory variables together, cohorts, regions, cultural groups and education. We observe that the odds ratio only slightly decreases for all variables, and the direction of their effect on self-arranged marriage remains the same as the previous models.

In our final model (model 6 in Table A2 in the appendix), we add other control variables, such as age at marriage and partners' childhood place of residence. The odds ratio only slightly changes, and the direction of the effects on self-arranged marriage remains the same. In addition, we observe that self-arranged marriage is not significantly associated with age at marriage. Moreover, self-arranged marriage is more likely when the childhood place of residence and the current place of residence are the same, showing that self-arranged marriage might be favored by stability of residence and long-term acquaintance.

The variance at the district level is higher in models 1, 3 and 4 than in models 2, 5 and 6, which indicates considerable heterogeneity in self-arranged marriage likelihood within districts (Table A2 in the appendix). As expected, the heterogeneity is much lower in the second model, in which we check for the effect of region, and in the final model, in which we control for other independent variables. The intraclass correlation coefficient (ICC) reports the correlation between self-arranged marriage and district. Conditional on the fixed effects covariates, we find that the district-level random effects contribute approximately 40% of the total residual variance in models 1, 3 and 4; contribute much less, approximately 30%, in model 2; 28% in model 5; and 27% in the final model 6. The high ICC ($>.10$) confirms the relevance of the multilevel analysis.

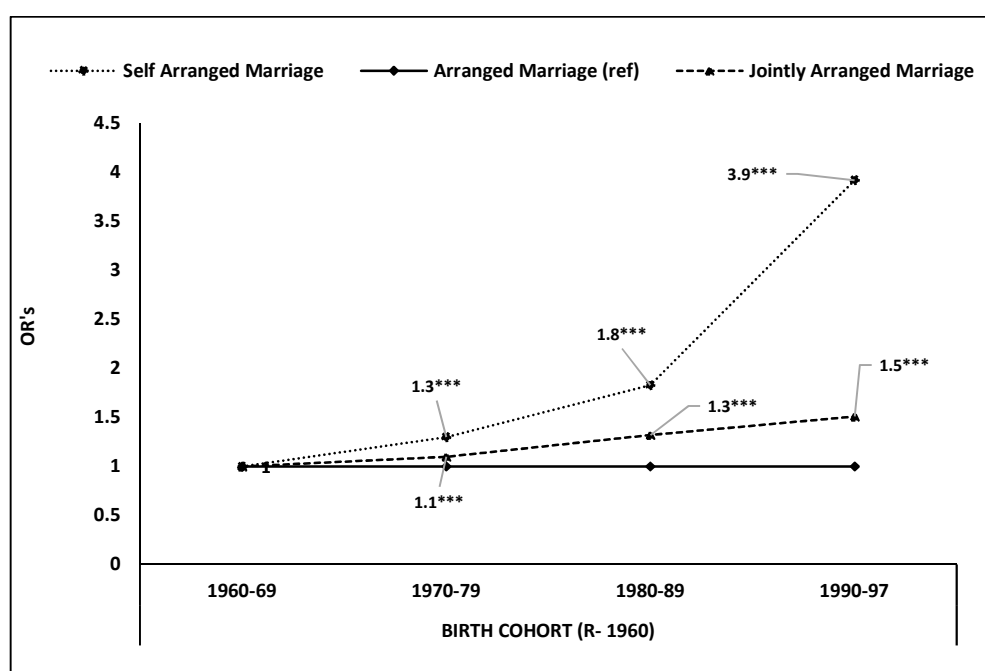
Multinomial logistic regression

Finally, we distinguish between self-arranged marriages, jointly arranged marriages and arranged marriages. Thus, we compute a generalized structural equation model to account for both the multilevel structure of the data and the multinomial dependent variable (Figure 4)². We contrast self-arranged marriage and jointly arranged marriage with arranged marriage, the reference

² Data available upon request.

category. The results are consistent with those previously obtained. In addition, age at marriage, which was previously not significant, now significantly affects self-arranged marriage. With age at marriage above 25 years, the odds ratios of experiencing a self-arranged marriage increase by almost one and a half times. Because we are comparing more dissimilar typologies of marriage, it is not surprising that those factors that favored self-arranged marriage in the analysis above now present even higher odds ratios for all variables.

Figure 4. **Multinomial multilevel logistic** model for marital arrangements among ever-married women aged 15-50 (**odds ratios**)



Source: Own computation, IHDS 2011-12. Note: Variables controlled: caste group, region, parents' and parents-in-law's education, childhood place of residence and age at marriage. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Discussion and Conclusion

Although still a marginal phenomenon, the practice of self-arranged marriage has increased in India, especially among the youngest generations, confirming our *first hypothesis* (H1): the youngest cohorts are three to four times more likely to experience self-arranged marriage than the

oldest generations, even when other control variables are considered in the multivariate analysis.

Still consistent with our first hypothesis, once a multinomial logistic analysis is performed, our findings show that the odds of jointly arranged marriage are 50% higher for younger generations than for the oldest generations.

Our *second hypothesis* (H2) assumed a positive effect of the educational level of both sets of parents and, especially, parents-in-law on self-arranged marriage. Our findings support this hypothesis. This is in line with modernization theory and developmental idealism, according to which a new behavior spreads through the most educated, as they are the most likely to be exposed to transnational cultural flows (Netting 2010; Malhotra & Elnakib 2021; Szarota et al. 2021). Intergenerational transmission of autonomy in spouse choice is not excluded, with educated parents and in-laws who might be more likely to have experienced self-arranged marriage themselves. The effect of parents-in-law's education level on self-arranged marriage appears to be particularly strong. Given the high education of fathers-in-law, having a highly educated mother-in-law is more likely to be associated with self-arranged marriage. This is in line with what also shown by Ray et al. (2020). After marriage, the wife often lives with her husband and her in-laws (Char et al. 2010; Allendorf 2013), making consent to the marriage by the parents-in-law extremely important. In this context, mother-in-law's high education might assure openness to new mating models and probably also a higher bargain power to defend this model. Our study enriches previous findings by considering the interaction of education of both in-laws.

Our findings on self-arranged marriage by caste groups exhibit a J-shaped profile. Women from the SC and ST caste are more likely to experience self-arranged marriage than women from the intermediate ranked OBCs, the largest caste in India. This finding was in line with our *third hypothesis* (H3b) predicting that women of lower castes have no privilege to preserve with an arranged marriage or that they are more interested in upward mobility. In addition, and in line with

developmental idealism theory, women of higher castes, such as the General Castes and Brahmins, are also more likely to experience self-arranged marriage than women from the intermediate ranked OBCs (H3a) (although less than lower castes). These results obtained with a multivariate approach contradict previous descriptive studies showing limited differences in self-arranged marriage among castes (Allendorf and Pandian 2016). Moreover, as expected, other cultural groups, such as Christians, Jains and Sikhs, showed high odds of self-arranged marriage as well.

Concerning the regions, in our *fourth hypothesis* (H4), in line with modernization theory, we expected that women in more developed regions are more likely to experience self-arranged marriage. This assumption was supported by our findings. The regions of the Hindi-speaking belt, i.e., North, West and Central India, where patriarchy is the most entrenched (Desai and Andrist 2010; Jones 2010), are the regions where the arranged marriage system continues to be the dominant marital arrangement. However, the strongest likelihood of self-arranged marriage was not observed in the most developed region, i.e., the South region, but in the Northeast region, which is bordered by neighboring countries such as China and Myanmar and where the culture is distinctly different from that of the rest of India (Allendorf and Pandian 2016). In particular, according to the 2011 Census, in the Northeast region, the percentage of Christians is higher than that in the rest of India, reaching 87.93% of the population in Nagaland. Additionally, the tribal population, which is also the highest in this region (26%), practices a matriarchal culture (Garg 1960). These features might create a context more favorable to self-arranged marriage in the region.

Another region distinctly different from others is the East. The higher likelihood of self-arranged marriage may be attributed to the historical evolution of the East region, wherein Calcutta was made the erstwhile capital of British India after India was colonized by the British, who stayed there for over three centuries (Scrase 2002). This resulted in a blend of culture with the Western

concept of modernism and less conservativeness. Colonialism can also be seen as another mechanism of diffusion of developmental idealism (Thornton et al. 2014).

This study has limitations. First, in the younger cohort, a large share of women were not yet married and were not included in our sample of ever-married women. These single women may marry in the future, and their probability of choosing self-arranged marriage may be quite high. Thus, our study could not completely capture the marital behavior of younger cohorts, and we may have underestimated their self-arranged marriage practices. Second, as explained above in the methodological section, we considered parents' education instead of women's education to avoid reverse causality issues. To try to ascertain the causal effect between women's education and self-arranged marriage, we could have limited our sample to newly married women to measure their educational level at the time of marriage and use it as an explanatory variable of self-arranged marriage. However, the limited size of our sample did not allow us to apply such a selection. Finally, we did not have information on the male partners' characteristics concerning cultural groups. Consequently, we could not determine which combination of castes is more often associated with self-arranged marriage.

Despite these limitations, our study contributes to the literature with original results regarding self-arranged marriage by region and cultural group. It also contributes to enriching the limited literature on the link between education and self-arranged marriage. Women's education may create a virtuous process of emancipation: highly educated mothers, and especially mothers-in-law, favor self-arranged marriage, and this, in turn, might expose daughters and daughters-in-law to a lesser risk of violence within the family (Rastogy and Therly 2006; Jejeebhoy et al. 2013). In future studies, indicators of the gender system (educational gender gap, violence against women, dowry system, sex ratio, etc.) at the regional and district levels should be explicitly taken into

account to ascertain the extent to which they are associated with differences in self-arranged marriage.

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Appendix

Table A1: Sample Characteristics.

SAMPLE CHARACTERISTICS		Self-Arranged Marriage		Jointly Arranged Marriage		Arranged Marriage		Total
		%	No.	%	No.	%	No.	
CULTURAL GROUPS	Brahmin	4.54	81	19.00	339	76.46	1,364	1,784
	General	6.44	390	25.90	1,568	67.66	4,096	6,054
	OBCs	3.08	372	22.12	2,672	74.80	9,036	12,080
	SCs	4.84	374	19.82	1,533	75.34	5,827	7,734
	STs	10.71	315	19.48	573	69.82	2,054	2,942
	Muslim	4.74	203	21.98	941	73.28	3,138	4,282
	Others (Chris, Jain, Sikh)	6.16	58	26.75	252	67.09	632	942
REGIONS	Northeast	32.83	474	34.42	497	32.76	473	1,444
	North	3.49	406	15.20	1,770	81.31	9,469	11,645
	Central	1.74	103	10.08	596	88.17	5,211	5,910
	East	7.35	300	14.94	610	77.71	3,173	4,083
	West	3.11	151	40.72	1,979	56.17	2,730	4,860
	South	4.56	360	30.83	2,432	64.60	5,096	7,888
PARENT'S EDUC.	Mo.L - Fa.L	4.28	1,163	20.47	5,009	74.85	18,314	24,467
	Mo.H - Fa.L	5.51	240	32.03	213	59.25	394	665
	Mo.H - Fa.H	8.93	327	31.71	1162	58.95	2,160	3,664
	Mo.L - Fa.H	9.48	51	21.19	1500	74.65	5,284	7,078
PARENT-IN-LAW'S EDUC.	Mo.L - Fa.L	4.51	1,196	20.65	5,470	74.73	19,799	26,495
	Mo.H - Fa.L	7.61	41	31.73	171	60.30	325	539
	Mo.H - Fa.H	10.85	280	32.79	846	56.20	1,450	2,580
	Mo.L - Fa.H	4.42	277	22.32	1,397	73.13	4,578	6,260
BIRTH COHORT	1960-1969	3.71	304	20.61	1,687	75.68	6,194	8,185
	1970-1979	4.64	579	21.86	2,730	73.50	9,178	12,487
	1980-1989	5.34	643	23.15	2,789	71.51	8,616	12,048
	1990-1997	8.58	266	21.71	673	69.71	2,161	3,100
AGE AT MARR.	Below 18	3.98	899	19.21	4,337	76.80	17,337	22,573
	18-25	6.48	794	26.45	3,239	67.07	8,214	12,247
	Above 25	9.95	99	30.45	303	59.60	593	995
CHILDH. PLACE OF RESID.	Same Village	11.27	721	26.48	1,694	62.25	3,982	6,397
	Another Village	3.47	790	20.24	4,606	76.29	17,363	22,759
	Another Town	4.03	243	23.39	1,411	72.58	4,378	6,032
	Metro City	5.87	23	25.77	101	68.37	268	392
Total		5.01	1,794	22.00	7,884	72.99	26,152	35,830

Table A2. Multilevel logistic regression model of self-arranged marriage among ever-married women aged 15-50 (odds ratios)

INDEPEND. VARIABLES		MODEL 1	MODEL 2	MODEL 3	MODEL 4	MODEL 5	MODEL 6
BIRTH COHORTS	1960-1969	R				R	R
	1970-1979	1.31*** (0.10)				1.28*** (0.10)	1.26*** (0.10)
	1980-1989	1.78*** (0.14)				1.71*** (0.14)	1.71*** (0.14)
	1990-1997	3.50*** (0.34)				3.41*** (0.34)	3.54*** (0.36)
REGIONS	Northeast		57.09*** (21.20)			53.83*** (19.78)	43.39*** (15.69)
	North		1.46 (0.34)			1.58* (0.37)	1.61** (0.38)
	Central		R			R	R
	East		4.65*** (1.32)			4.58*** (1.29)	4.18*** (1.16)
	West		1.93** (0.54)			1.95** (0.54)	1.80** (0.50)
	South		3.28*** (0.80)			3.61*** (0.00)	2.72*** (0.66)
CULTUR. GROUPS	Brahmin			1.30* (0.18)		1.25 (0.18)	1.17 (0.18)
	General Castes			1.37*** (0.12)		1.34*** (0.12)	1.28*** (0.12)
	OBCs			R		R	R
	SCs			1.49*** (0.13)		1.48*** (0.13)	1.39*** (0.12)
	STs			2.03*** (0.21)		2.02*** (0.11)	1.88*** (0.20)
	Muslims			1.06 (0.11)		1.02 (0.11)	0.86 (0.10)
	Others (Christian, Jain, Sikh)			1.64*** (0.29)		1.57** (0.28)	1.52** (0.27)
PARENT'S EDUC.	Mo.L - Fa.L				R	R	R
	Mo.H - Fa.L				1.43** (0.24)	1.31 (0.22)	1.28 (0.21)
	Mo.H - Fa.H				1.28*** (0.12)	1.23** (0.12)	1.20*** (0.12)
	Mo.L - Fa.H				1.01 (0.08)	1.01 (0.08)	0.98 (0.08)
PARENT-IN-LAW'S EDUC.	Mo.L - Fa.L				R	R	R
	Mo.H - Fa.L				1.13 (0.21)	1.01* (0.19)	1.01 (0.19)
	Mo.H - Fa.H				1.58*** (0.16)	1.52*** (0.15)	1.47*** (0.15)
	Mo.L - Fa.H				0.97 (0.08)	0.94 (0.08)	0.96 (0.08)
Same vill./town							R

CHILDH. PLACE OF RESID.	Another village						0.32*** (0.02)
	Another town						0.34*** (0.03)
	Metro city						0.65* (0.15)
AGE AT MARR.	Below 18 years						R
	18 to 25 years						1.1 (0.07)
	Above 25 years						1.01 (0.15)
	District						
	var(_cons)	2.3781	1.3437	2.1270	2.1297	1.2917	1.2294
	ICC	0.4196	0.2900	0.3927	0.3930	0.2819	0.2720
	Observations	35,820	35,830	35,818	35,830	35,808	35,546
	Log Likelihood	-5721.6	-5752.0	-5783.6	-5786.1	-5603.9	-5396.7
	Prob > Chi2	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Source: Own computations, IHDS 2011-12. Note: Dependent Variable: 1= Self-arranged marriage, 0= Not Self-arranged marriage. Standard error presented in parentheses. ***p<0.01, ** p<0.05, * p<0.1