Cultural Correlates of Domestic Violence

Stefan Klonner[1] *Heidelberg University*

Sumantra Pal[2] *Heidelberg University*

Abstract: A body of extant literature suggests that improvements in wellbeing and empowerment of women in the process of development are hindered by traditional social norms, which are often patriarchic. This paper investigates the link between traditional social norms ruling women's status in society and the incidence of violence experienced by women in marriages. The empirical setting is India's Northeast, where there is great variation regarding patriarchic versus matriarchic lineage, residence and inheritance customs. In our econometric analysis, we combine information on cultural norms prevailing among the different tribes from the comprehensive ethnographic atlas People of India with individual-level data on domestic violence from one of India's National Family Health Surveys. We find that several cultural norms surrounding marriage are important predictors of contemporary domestic violence. In line with established economic theories of the marriage, fewer frictions in the marriage market and greater female control over material resources improve women's welfare. On the other hand, several seemingly un-modern social norms which imply greater monitoring of spouses by the extended family and the society, also curtail domestic violence significantly.

Keywords: domestic violence; ethnography; culture; India

JEL-Codes : Z13, B54, J12

1 Chair of development economics at South Asia Institute, Heidelberg University, Germany. klonner@uni-heidelberg.de.

2 Doctoral candidate at South Asia Institute, Heidelberg University, Germany. pal@uni-heidelberg.de. Authors are grateful to the participants of the first DGGO Ph D workshop held in Heidelberg, on Jun 22, 2018 for comments and suggestions. Research assistance from Zachary Herriges and Akash Tripathy is gratefully acknowledged.

1. Introduction

There has been a great progress in economic and human development over the last two decades around the world, especially in Asia (World Development Indicators 2017), but domestic violence against women continues to be a global phenomenon. In high-income countries and in Europe, the incidence of domestic violence is reported at 23% and 25%, respectively. The incidence of domestic violence is higher in Africa (37%) and in South and South-East Asia (38%) (World Health Organisation 2014). This is at odds with Millennium Development Goals 3 and 5 and Sustainable Development Goal 5, and a particularly worrisome trend. Moreover, domestic violence is a pervasive public health problem, globally. It has severe ill-effects on women's physical, mental, sexual, and reproductive wellbeing (Ackerson and Subramanian, 2008).

A body of extant research has addressed the determinants of domestic violence among women. Risk factors that have been identified by this literature include socioeconomic characteristics, observable differences between husband and wife, a woman's work status, the presence of violent conflict outside the household, divorce laws, and dowries. With the exception of Alesina et al. (2016), little is known, however, on how social norms ruling gender relations in a society systematically affect women's integrity in a marriage. On the other hand, there is plenty of theoretical work and numerous case studies on the effect of social norms on women's well-being (e.g. Anderson, 2017).

In this paper, we advance the understanding of social norms ruling gender relations for the incidence of domestic violence. The empirical setting are the Northeastern States of India, where several hundred tribes populate a relatively small, politically largely homogeneous area. These societies exhibit great variation regarding the organisation of the marriage market, divorce and lineage rules, as well as residence and inheritance customs. For domestic violence, we use individual-level data from India's National Family Health Survey (NFHS-3) carried out in 2005-06. For traditional norms in the different societies, which are typically not codified in written laws, we employ the ethnographic atlas People of India (Singh, et al., 1994), a 32 volume compendium, which contains systematic information on all of these norms for each caste and tribal group in India. For each community, we systematically code their marital and separation norms, as well as, succession and inheritance rules. It is the main empirical innovation of this paper to this mostly qualitative information in

a systematic way similar to the well-known ethnographic atlas by Murdock (1967)[3]. We combine the data on domestic violence with the social norms data thus obtained through the tribal affiliation of a respondent in the NFHS. The resultant novel dataset permits us to identify predictors of domestic violence among sets of traditional norms. We perform simple cross-sectional regressions, where domestic violence experienced by a survey respondent is the dependent variable and the traditional norms prevailing in her society are the explanatory variables of interest. In addition, we control for a host of society-level and individual-level characteristics ranging from ancestral agro-pastoral practices to the socio-economic status of the woman's household. In our main regressions, there are close to 7,000 survey respondents from 118 distinct tribes.

Our main findings are as follows. First, regarding partner selection norms, we find that societies practising endogamy and free partner choice exhibit significantly less domestic violence. Each of these two factors reduces the average number of atrocities ever experienced by a married woman by about one third. Second, regarding marriage payments, we find that atrocities are only half as frequent in societies where both brideprice and dowry are practised, relative to regimes of only dowry or only bride-price, or neither of the two. Third, regarding residency norms, permanent residence of a couple with either the husband's or wife's parents halves domestic violence relative to neolocality (the couple founds a new residence) and other arrangements. Fourth, regarding separation norms, women in societies where the families or the community have to approve a divorce, experience around one third fewer incidences of violence. Finally, regarding lineage rules, we find that matrilineal hereditary succession greatly reduces the experience of domestic violence, by more than one half, while matrilineal descent norms have the opposite effect. In societies practising the latter, the incidence of ever having experienced violence is about one quarter higher than on average.

The pattern of these results conveys two main lessons. First, the embeddedness of both spouses in the community, as well as the involvement of the community and families during and at the end of a marriage, curtail domestic violence. In more economic jargon, the subset of our main findings regarding endogamy, a couple's residence and divorce, suggest that there are welfare benefits to women from external 'monitoring' of a marriage by the spouses' families and by society. Second, in accordance with received theories of the marriage, our

3 There is a large number of recent papers in economics using Murdock's Atlas (1967). They all focus on Africa. For India, in contrast, the coverage of Murdock's Atlas is far less complete than that of the *People of India*. For our study area, Murdock lists 8 societies, while the *People of India* list 4635.

results indicate that fewer frictions in the marriage market and a stronger relative position of the wife within the marriage are welfare-enhancing for women, at least regarding our measures of integrity. Love marriage and no restrictions on marriage transfers have been argued to improve match quality in the marriage market (Becker, 1981). In addition, a wife's 'threat point' and hence her bargaining position in the marriage are improved when there is matrilineal inheritance, which gives her more control over family resources (Duflo, 2003). Our finding regarding love marriage refines our first set of results: excessive involvement of families and the community in the matching process of the marriage market, that is before the marriage, jeopardises women's integrity in the marriage, while the opposite holds for external 'monitoring' during the marriage. Finally, our seemingly contradictory finding that matrilineal descent predicts more male violence in the marriage has been found by several studies in other contexts and has been termed the "matrilineal puzzle" (Richards et al., 1950). According to these authors, female-based lineage rules increase male stress and aggression, while – unlike matrilineal hereditary succession – they do not improve a woman's bargaining power in the marriage. Conditional on inheritance rules, these two factors then predict more domestic violence in societies with matrilineal descent rules.

Our findings also carry some implications for women's welfare in the process of economic development. We recognise, of course, that it is somewhat daring to apply our cross-sectional findings to longitudinal structural changes. Through market development, social security and state welfare, modernization typically promotes the nuclear family and reduces the involvement of the community and extended family. According to the first lesson derived from our empirical findings, the benefit of external 'monitoring' of marriages, the tendency towards nuclear families and less involvement by the community in marriage matters pose a threat to women's integrity in the process of modernization. On the other hand, according to the second lesson stated above, the benefits of free partner choice, fewer frictions in the marriage market and greater female control of material resources in a marriage, the general modernization trends towards individualisation, decreasing dowries, gender-neutral inheritance entitlements and greater female labour force participation should reduce spousal violence. In this context, the recent surge of dowries in India (Anderson, 2003) is a matter of concern. Taken together, our empirical results suggest that the general trends regarding the family brought about by economic development may be a mixed blessing for female welfare, at least as far as psychological and physical integrity in the marriage is concerned.

Our research contributes to three stands of literature. The first one is the large literature on the determinants of domestic violence. In an important work, Heise (1998) structured socio-ecological risk factors for domestic violence into four groups, namely, personal history, microsystem, exosystem, and macrosystem. The individual (personal history) factors include witnessing marital violence in childhood, childhood abuse, or father's absence or rejection. Factors, such as male dominance, male control of wealth, alcohol consumption, fall into the microsystem. Low socioeconomic status, isolation of women in the family are the exosystem factors that entail domestic violence. Various cultural values comprise the macrosystem factors, including the masculine notion of dominance, inflexible gender roles at the individual and societal level, sense of entitlement or women ownership among men, and cultural approval of punishing women in certain context. In the empirical literature, a first strand focuses on a variety of individual, family, and community level determinants as risk-factors to domestic violence (Koenig et al., 1999; Koenig, 2006; Flake, 2006; Jewkes et al., 2002; Bates et al., 2004; Straus and Hotaling, 1980). These determinants can be seen compatible with the broad ecological framework proposed by Heise (1998). More related to our approach, for Spain, Tur-Prats (2015) shows that societies where joint families (families where two or more generations co-reside) are traditionally predominant, women experience less domestic violence. In the developing country context, Alesina et al. (2016) use a similar empirical approach and data as we do for Sub-Saharan Africa. However, they focus primarily on the effect of women's economic value in traditional agricultural production on contemporary domestic violence and less on traditional marriage and lineage norms. In contrast to our multiple regressions, they only run simple linear regressions of domestic violence on one norm at a time[4]. Our contribution to this strand of literature is threefold. First, we consider a comprehensive set of marriage norms. Second, we conduct a multiple regression analysis, which strengthens the causality of our findings. Third, ours is the first study of this kind in a South-Asian context, where women's status is particularly low and domestic violence high in international comparison. In this connection, we are first to tap a valuable systematic ethnographic source thus far undiscovered by economists, the *People of India*.

4 Leyaro et al. (2017) estimate the cultural origins of domestic violence exploiting the variation in characteristics of traditional subsistence livelihoods. They find women in sea-fishing communities in Tanzania are better equipped to make decisions, more independent and less vulnerable to domestic violence than in lake-fishing communities.

Our second contribution is to a quickly growing literature on the impact of cultural norms on various development outcomes (Nunn, 2011; Michalopoulos and Papaioannou, 2013; Alesina et al., 2013; Moscona, Nunn, and Robinson, 2017; Alesina et al., 2018; Anderson, 2018; Bau et al., 2019). They, as well as many others, rely on ethnographic characteristics from Murdock's Ethnographic Atlas (1967). Our contribution to this literature is that we demonstrate the long-term effects of traditional marriage norms in detail, where some of the effects conform to well-established theoretical mechanisms, while others, in particular, those regarding community and families' monitoring, are novel.

Our third contribution is the economic literature on the marriage in the context of developing countries. It addresses such diverse issues as the matching market and marriage payments (Anderson et al., 2017), global trends in dowries and bride-prices (Anderson, 2003; Rao, 1993; Ambrus et al., 2010; Mulder, 1995) and polygyny (Tertilt, 2005). Regarding marriage norms more narrowly, in most of the extant literature, the study object are legal changes in high-income countries' divorce legislation or cross-sectional variation in divorce laws. For example, unilateral divorce (Rasul, 2006) and the link between unilateral divorce and labour supply (Gray, 1998). Chiappori (2002) examines the interlinkages among unilateral divorce, property division, enforcement of alimonies and consideration of professional and academic degrees and labour supply. The effect of divorce laws and divorce rates in the US (Peters, 1986; Friedberg, 1998; Wolfers, 2006) have been analysed in the light of the effect of alimony rights on spouses surplus in existing and new partnerships in Canada and Brazil (Chiappori et al., 2017; Rangel, 2006). However, regarding the effect of such norms on the welfare of women, Anderson (2007) writes: "Though marriage payments can take many different forms, no consensus exists on which of these forms, if any, will enhance the welfare of women". While a brideprice appears to be the regime that promises greater female welfare, the evidence is unclear and brideprices have been made responsible for domestic violence (Ansell, 2001), more extramarital affairs of men (Bishai and Grossbard, 2010) and the spread of AIDS (Wendo, 2004) in Africa. On the other hand, dowries are commonly blamed to harm both unmarried and married women through female child neglect, sex-selective abortions and domestic violence, especially in Asia (Bloch and Rao, 2002). We make two contributions to this literature. First, we consider a comprehensive set of marriage norms with greatly differing realisations simultaneously. Second, in our identification strategy we control not only for individual characteristics of respondents but also traditional structural

economic characteristics, in particular agro-pastoral practices as well as settlement types.

The rest of the paper is organised as follows. We present our conceptual framework in section 2. In section 3 we describe our dataset. The empirical approach is laid out in section 4 and results are discussed in section 5. In section 6 we perform some robustness checks before concluding in section 7.

2. Conceptual framework

In order to identify the pathways through which incidence of domestic violence takes place in different societies and the extent to which violent behaviours are accepted, tolerated and endorsed differently we present a conceptual framework depicting (Figure 2) major factors that are observed, partly observed and unobserved. For illustrative purpose, we offer a few examples that will help us approach the identification problem. Large productivity differences in agricultural production between different sexes, for example, plays a role in the channel from environmental factors to cultural norms surrounding marriage. The environmental factors may also affect the cultural norms regarding domestic violence, a general lack of safety for women makes domestic violence more broadly acceptable. On husband's incentive, the environmental factors can play a major role, a general lack of safety for women makes husbands more aggressive at home. In communities that follows matrilocal post-marital residency norm, domestic violence is tolerated more as a compensation for the husband leaving his parents and co-reside with the bride's family. This is an example of the effect of cultural norms of marriage on cultural norms on domestic violence.

There could be two pathways from cultural norms of marriage to husband's incentive for domestic violence, (a) match- quality and (b) distribution of bargaining power. The lower is the restriction on marriage payments in terms of marriage rules in a tribe, the greater would be the match quality and higher would be the male satisfaction. The acceptability of remarriage of divorced women in a society can improve women's relative bargaining position and thereby restrain husband's violent behaviour. Certain cultural norms regarding marriage also directly affect the husband's incentive for domestic violence. For example, in a matrilocal community, husband are emotionally stressed. The link between husband's incentive for domestic violence on domestic violence is direct, as, for example, more frequent stress situation on the side of the husband result in more domestic violence. Where spouses perceive domestic violence as normal, domestic violence occurs more often when the husband desires

it. This pathway from cultural norms on domestic violence to domestic violence is not direct. Therefore, cultural norms on domestic violence may cause domestic violence through mitigation or amplification of husband's incentive for domestic violence.

[Insert Figure 1]

3. Data

For statistical analysis in this paper, we use the women-only questionnaire data of the third wave of the National Family Health Survey (India National Family Health Survey, 2005-06) (NFHS-3, hereinafter). The Monitoring and Evaluation to Assess and Use Results Demographic and Health Surveys (MEASURE DHS) under the aegis of the United States Agency for International Development (USAID) made the data publicly available. The NFHS-3 survey collected information on demography, health and nutritional aspects of a nationally representative sample of 109,041 households, 124,385 women aged 15-49, and 74,369 men aged 15-54. We consider a sub-sample of 20,238 observations from all the 8 northeastern states of India, namely, Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, and Tripura. This subsample has been carved out because a typical mix of matrilineal and patrilineal societies reside in this zone. The women-only questionnaire, in NFHS-3, includes a special section on domestic violence is defined to include violence by spouses. While eliciting information on domestic violence from a randomly selected woman aged 15-49 from within the household, strict privacy was ensured and the respondent women were reassured about the confidentiality of their responses. These women were privately interviewed by women investigators when casting questions about the occurrence of domestic violence and women's attitude towards justifying the violence.

In the questionnaire each women (aged 15-49) and men (aged 15-54) respondent were asked their caste/tribe affiliation.. These responses enable us to assign each women respondent in the NFHS-3 to her corresponding community in the Ethnographic Atlas, the People of India. For determining the community characteristics, we had to rely on the Anthropological Survey of India's People of India Project (Singh et al., 1994). This project from October 1985 to March 1992, had identified, located and studied 4635 communities across length and breadth of India, out of 6748 communities listed initially in the Census. About 25000 investigators involved in this mammoth survey over 26000 field-days stayed on an average 5 days with each community. They conducted interviews in 3581 multi-community villages and in 1011 towns, located across 421 districts and 91 cultural regions.

The result of the survey was published and we accessed respective volumes which contains detailed accounts on 118 communities residing in Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, and Tripura. For each of the major communities, we codify the community characteristics in terms of their ancestral cultural norms about marriage transfers, marital norms, partner selection, separation norms, lineage, succession and inheritance rules.

[Insert Figure 2]

The data on caste/tribe names as recorded in the NFHS-3 is not clean and there is a great variety of spelling of the caste/tribe names. We had to adopt specific concordance rules such that the information from ethnographic atlas can be merged and matched to the NFHS-3 dataset. In the literature, we could not trace any paper that has used the People of India Ethnographic Atlas and merged ethnographic characteristics with NFHS data. There have been recent instances that similar merging and matching of Murdock's Ethnographic Atlas and DHS dataset. (See, for example, Alesina et al. 2016 and Michalopoulos and Papaioannou 2013). Thus, in order to match and merge and assign the ethnic identity to the observations in NFHS data with the ethnicity variables in People of India Ethnographic Atlas, we adopt four possible methods. (a) Where the name of ethnicity in the DHS is identical to the name of ethnicity in POI, a direct matching is possible; (b) For the remaining, I cleaned the caste-tribe names by spelling corrections to map it to POI names; for instance, a major tribe named as 'Meitei' in POI is in DHS as 'Meeti', 'Meitee' , or 'Miteei'. (c) Community names are recorded in DHS using alternative names of a community; for example, 'Jaintia' is listed as its alternative name; (d) varna system involves classification of castes in terms of the Hindu system of social classes, namely, Brahmin, Kshatriya, Vaishya, Sudra, and Kayastha. We match about 15000 observations from the DHS dataset (76% of the DHS sample) consisting around 120 tribes from 8 northeastern states of India. Our matching strategies (Figure 1) and the resultant matched number of observations and number of ethnicities are presented in Table 1, in order of accuracy.

[insert table 1]

4. Empirical Specification

We estimate cross-sectional regressions and derive the marginal effects of different cultural norms on actual domestic violence and cultural norms regarding domestic violence, which is

measured by women's and men's acceptance, tolerance and endorsement of domestic violence. we construct the following model:

$$V_{ies}=\alpha_s + \beta \,.\, X_{ies}+ \gamma \,.\, Q_e + \varepsilon_{ies} \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots (1)$$

The dependent variable domestic violence V_{ies} represents ever any incidence of domestic violence, violence index, violence attitude, and violence attitude index for i^{th} woman's attitude towards it for with e^{th} ethnic identity in s^{th} state. The actual violence ever inflicted on a woman is indicated by a dummy variable 'violence ever'. The aggregate indicator of one or more types of violent incidence encountered by the women is captured by 'violence index'. It is a count variable. Apart from these two variables that capture the actual experience of violence, we consider another two variable that indicates women's attitudinal measures towards acceptance or justification of violence. Those are indicated by 'violence attitude dummy' and 'violence attitude index. The latter is a count variable. The descriptive statistics of all the 4 dependent variables are presented in table 2. The definitions and description of the dependent variables are presented in the Appendix A1.

[Insert Table 2]

The set of individual characteristics are represented in X_{ies}, with a vector of control variables, X_{ies} includes a range of control variables, both at individual and at community level. The controls at the individual level include age, education, wealth index, household size, urbanity, history of violence witnessed, household structure, alcohol consumption patterns, agro-climatic conditions and female role in subsistence. The descriptive statistics of all the 18 control variables are presented in table 3b. The cultural norms of a given ethnicity “e” are represented with Q_e . It includes cultural norms, namely, brideprice, dowry, exogamy, polygyny, consanguinity, marriage symbols, marriage types, post-marital residency, divorce rules, alimony rights, child custody rights, remarriage of divorced women, descent norms, inheritance and succession norms. In addition to these, land ownership norms, settlement types are captured.The definitions and descriptions are presented in Appendix A3. The descriptive statistics of all the 15 cultural norms are presented in table 3a. The definitions and description of the independent variables are presented in the Appendix A2. The state fixed effects are represented with α_s and ε_{ies} is the independent and identically distributed (IID) error term that captures the unobservable factors.

We identify the effect of cultural norms on the differences in domestic violence and cultural norms across tribes in the same state, conditional on individual socio-economic and

other observable characteristics. Identification comes from the differences in domestic violence across tribal groups as explained by differences in cultural norms in 118 tribes while controlling for the other observable socio-economic factors. The estimated effects are conditional correlations, and not necessarily causal effects, as we adopt the epidemiological approach. The omitted variables in the form of other possibly correlated norms and institutions are the challenge. Therefore, our empirical approach is (a) regress domestic violence on cultural norms of marriage while controlling for as many environmental factors as we can, and (b) to regress cultural norms of domestic violence on cultural norms of marriage. The latter allows us to eliminate or control for confounding factors working through the Environmental Factors-Cultural Norms of domestic violence channel. We cannot ultimately rule out confounders through the Environmental Factors-Husband's incentive channel. If we believe confounders in that channel are small, we would obtain the causal effect of cultural norms of marriage on domestic violence that work through the husband's private incentives.

[Insert Table 3a and 3b]

5. Results

Since we have dummy dependent variables, we estimate a probit model; and where the dependent variable is count data, we estimate the Poisson model. In both cases, for the ease of interpretation, we report the marginal effects. We estimate all the 18 control variables and 16 cultural norms simultaneously in each of the six regressions. However, considering the length of the table, we split and present in separate panels to optimise the space. To start with we present the marginal effects with respect to the control variables in the panel on control variables at the end of Table 5. The point estimates show that increase in education, wealth and age appears to lead to lower incidence of domestic violence and lesser acceptance of domestic violence among women and men. When men and women are older in age, they seem to less accept domestic violence. Actual domestic violence both in terms of its occurrence and intensity decreases with the increase in years of education for women. The marginal effects also show that there is a 1% to 6% lesser tolerance and lesser endorsement of violence as one more year of education is received by the women and the men, respectively. These effects are equivocal and statistically significant at 1 % level. Education is a good policy to pursue as it broadens the outlook of both the couple and it carries a protective effect for women from the risks of domestic violence. In wealthier households, a violence reduction effect of education can be seen. Violence (actual, accepted, tolerated and endorsed) reduces with the increase in

wealth of the household. Together, we can conclude that for educated women in a wealthier household in their mature age would be less likely to be subjected to domestic violence. These findings are meaningful in general that wealthier and more educated households are less stressful and possess a conducive environment that prevents the incidence of domestic violence.

Increased occurrence of violence seems to take place in urban locations. This finding is in line with the standard argument regarding the stress factors linked to urban residency as compared to pastoral life (Hindin and Adair, 2002; Flake, 2005; Al-Nsour et al., 2009) that might induce domestic violence. The domestic violence is carried over across the generations as can be inferred from the evidence at galore in Indian context (Koenig et al., 2006). The family history of parental violence is inferred from the question whether the respondent has ever witnessed their father beating their mother. Brought up in such conditions, both men and women largely accept, tolerate and endorse wife-beating in the present day life. Given the family history of violence, women are more amenable and less resistant to a violent husband and therefore face a 17 per cent (column 1) greater likelihood of domestic violence and 28 per cent (column 2) increased the intensity of violence. These effects are equivocal and highly significant at the 1 per cent level. Another large risk factor that is positively associated with the incidence of violence is alcoholism. Alongside many other ill-effects of alcoholism, it increases the likelihood of violence by 17 per cent (column 1) and increases the intensity of violence against women by 40 per cent (column 2). These are very large effects. To summarise, the three big risk-factors for domestic violence are urbanisation, family history of violence and alcoholism. We now turn to how cultural factors associated with the occurrence of violence, and how the attitude towards violent behaviour, as reflected in the tolerance and the endorsement of violence are persistent among women and men. We also control for the agro-climatic conditions and the dependence on subsistence activities and the extent to which women take part in economic activities.

Boserup(1970) famously postulates in societies that traditionally practice shifting hoe agriculture women play a larger role in agriculture. In societies where plough is traditionally used women do not have a prime role in agriculture. Therefore, in an agrarian economy ancestrally practising ploughing, women could not participate in the labour force and are traditionally given a role in household work. On the other hand women in shifting hoe agriculture society enjoy a more equal status in the society as they are valuable because of

their economic contribution in agriculture. This is the hypothesis that holds in the context of Africa as an explanation for how gender-roles emerged (Alesina et al., 2013). In the context of South East Asia and especially in the context of a Northeastern state of India, Boserup (1970) points out the lazy men hypothesis. Men in these societies were meant to go hunting and take part in warfare to protect their cattle, wealth, and women. Women used to take part in food production by carrying out most of the complementary tasks, such as seeding, rowing, and gathering of crops. Eventually, the occurrence of warfare and other types of aggressions lessened. Thereafter, the specialised role of men as warriors are not much in use. Whereas, women still continue doing most of the agriculture with some help from men. For outside observers, 'lazy men' will appear as female takes part in food production in a greater way. Unlike Murdock's Atlas (1967), the *People of India* (1994) doesn't have exclusive categories for use of the plough, such as (i) the plough is absent, (ii) plough was introduced and not existed aboriginally, (iii) plough is aboriginal. In People of India, a close proxy of an absence of plough is available as the practice of shifting cultivation almost always rules out uses of the plough. The distinction between societies on the basis of prevalence of plough and aboriginal use of plough cannot be made in People of India. This data limitation makes the social distinctions on the basis of the plough is blurred and the reduction of violence is observed across the plough using societies are less precise, although statistically significant. The clear share of subsistence (as in Murdock, 1967) is again not available in the *People of India*. At best, for each tribe, it is usually noted which type of subsistence from the six types were traditional practices. These are coded as dummy variables, as dependence on agriculture, gathering, hunting, fishing, husbandry, and pastoralism. As noted above, hunting is primarily a male occupation in North–East India. In these societies where women take part in hunting along with men are most likely to be treated as equal in the society and would be considered valuable. A 9 per cent (column 3) reduction in the acceptance of domestic violence by women is observed and 27 per cent (column 4) reduction in the endorsement of violence by women seemingly the theoretical prediction that women's role are prominent in societies where hunting is prevalent. These effects are highly significant, statistically. A corresponding 9 per cent (column 5) reduction in male attitude towards reduced acceptance of domestic violence also corroborates this hypothesis.

The extent of female participation in various subsistence economy matters in determining their value in the society and can be important predictors of domestic violence.

Except other than female participation in hunting, fishing, in handicrafts, and in politics, we do not find any evidence on female occupation affecting domestic violence. In the case of feminised agricultural practices that employ women in a large extent, it is largely postulated that women will be regarding as important contributors to the subsistence of the tribe and therefore will not be subjected to domestic violence. This hypothesis holds good as there seem to be a reduction in violence by 7 per cent (column 1) in societies where women take part in hunting and fishing activities. Pursuing handicrafts also reduces the violence acceptance and endorsement by 9 per cent and 45 per cent (column 3 and 4), respectively. In societies where women pursue political leaderships are supposedly more independent and therefore are 19 per cent (column 3) less likely to accept violence and 79 per cent (column 4) less prone to violence endorsement. Next, we present the marginal effects with respect to the 5 broad categories of cultural norms in separate panels in Table 5 captioned as, Marriage payments, Marriage Regulations, Separation Norms, Lineage norms, and Settlement Patterns.

5.1 Marriage Payments

The panel on marriage payments in Table 5 presents the extent to which women are subjected to domestic violence in dowry paying societies and how these effects are moderated with the reverse marriage payment from the grooms family to the brides family. The intensity and incidence of violence increases if women happen to belong to a dowry paying society. The link between dowry and domestic violence is examined in the literature. Bloch and Rao (2002), for example, demonstrate that dowry violence can be an instrument to signal; by wife-beating husbands can bargain to extort more dowry money from the wife's family. In comparison, in societies where bride-price is the prevailing norm, we observe a protective attitude among women and men, as they seem to less accept, tolerate and endorse domestic violence. Women in brideprice paying societies are 11 per cent less likely to accept wife-beating as a norm(column 3), and men are 19 per cent less probable in accepting wife-beating(column 5). The endorsement of domestic violence also is less by 35 per cent for women (column 4) and 71 per cent for men (column 6) in brideprice paying societies. These effects are mostly statistically significant at the 5 per cent level. It could be tempting to think of brideprice as an antidote of dowry.

The protective effects of brideprice for women against the risks of domestic violence far outweigh the harmful effects of dowry, as can be seen in the overall reduced violence

(both actual and tolerated) can be observed in societies where both brideprice and dowry payments are the cultural norms. The marginal effects display a strong protective effect on women in terms of 19 per cent (column 2) reduction in the intensity of domestic violence (column 2). Anderson (2007), has illustrated the prevalence of dowry and brideprice across societies and linked it to economic conditions, societal structures, institutions, and family characteristics to establish the determinants of marriage payments. Further, he also linked marriage payments with property rights and welfare of women, while explaining the economics behind soaring dowries and declining brideprices. In our sample societies with prevailing norms of paying both forms of marriage payments.

Nunn (2005) advanced a game theoretic model of marriage transfer to explain the simultaneous payments of both brideprice and dowry. In his model, given men will cheat in a relationship, depending on women has better or worse 'outside options', there could be two equilibria. In the first equilibrium, women with better 'outside option' may not be willing to marry unless men commit by offering brideprice. The payment of brideprice by men makes the marriage look a credible commitment because it lowers men's payoff from cheating to committing. After paying brideprice, if a man needs to cheat and remarry, he has to continue paying brideprice in all his subsequent marriages. In the second equilibrium, women's 'outside options' are worse. Therefore, despite knowing men will cheat, women are better off marrying because otherwise, they need to live alone. A woman, however, can threaten to demand brideprice until she agrees to marry. If a man fell for this threat he might pay brideprice and stay faithful. But this is an incredible threat, given the worse outside options, a woman will still marry even without the brideprice. In such a situation, the customs dictate that a woman's family makes a transfer of a productive asset to the groom, in the form of a dowry. In this equilibrium, both dowry and brideprices are paid, and not just the net transfer. The large protective effect that we observe in societies with simultaneous marriage payments results from an interplay of the following three factors. First, in societies with an unbalanced sex ratio, marriage payments clear the market (Becker, 1981). For each groom, if less number of brides are available, a man pays brideprice to attract a bride. Second, the practice of brideprice also curbs women's independence due to their inability to pay back the brideprice if a marriage needs to be dissolute and she wishes to return to her natal family. The wife, therefore, has limited outside-option on account of her inability to pay back the brideprice and the dowry payments are already sunk. Third, in societies where women are actively engaged

in agricultural activities, payment of brideprice prevails, since by paying the brideprice the groom purchases the right to use wife in agricultural activities. Since women are valuable economically due to their labour force useful for agriculture and have already been paid for (through brideprice), it is unlikely that she would be subjected to violence. Therefore, we find the evidence acceptable for how each relevant marriage payment norms affects female welfare in the marriage.

5.2 Marriage regulations

The panel captioned marriage rules in Table 5 exhibits the effects of tribe-specific marriage regulations and shows how relative restrictions regarding the choice of marital partners, symbols used by women to display their marital status, modes and types of acquiring wives, and the place where the married couple goes to reside after marriage. We find evidence that these cultural factors are important predictors of domestic violence.

In anthropological literature, Hewlett and Stone (2001) have reported a considerable variety among human societies in the aspect that if marital partners are chosen from the same local clan or community (endogamy) or the partners are selected from different and outside her own clan or communities (exogamy). The spouses in exogamy are more mobile as they come from different clan or communities and because of they would have kins in two places they would be adjustable in two clans or communities. In addition to this advantage of exogamy, Dow et al. (2016) note the exogamous communities enjoy access to a greater pool of marriageable partners. The resultant effect could be a couple in societies following exogamous norms might find themselves a better match and who are more open to adjustment in their post-marital families. The antecedent costs of exogamy are, depending on post-marital residency rules, either of the spouses might have to live away from their natal families and as a result might get weaker intra-household bargaining power. The net effect of these costs and benefits are likely to get reflected in the increased incidence of domestic violence in the case of community endogamy. A 13 per cent (column 2) increase in the likelihood of occurrence of domestic violence is possible in exogamous clans relative to endogamous clans. Women in exogamous communities also seem to accept and tolerate violence more as normal in both communities that observe the rules of clan and community exogamy. These effects are significant at the 1 per cent level. Furthermore, beating wife who belongs to other ethnic communities might invite trouble for the abusive husband by way of retaliation from wife's

clan. This apprehension of retaliatory inter-ethnic conflict works as a deterrent to domestic violence (Fearon and Latin 1996). We find evidence in support of this as there is about 15 per cent (column 5) reduction in men accepting domestic violence in case both clan and community exogamy is practised.

The marriage between the kins in blood relation is practised widely in developing countries in South Asia, Africa, and the Middle East, thereby consanguineous marriage is an acceptable cultural norm. Consanguineous marriage involves lower partner search cost and yields greater match and compatibility of spouses and in-laws since they are previously known and connected through their kin network. Women can enjoy greater autonomy and higher status. Even the marriage payments might be lesser (netting-off brideprice and dowry) with a lower probability of divorce in consanguineous marriages. These factors taken together might yield a beneficial effect on women and the consanguinity is expected to be negatively correlated with the incidence of domestic violence (Anukriti and Dasgupta, 2017). However, in a marriage within the family, in the event of domestic violence, women's acceptance towards it might increase, as they may not find a way to vent out their misery. On an average, women tend to accept the justification for violence more in consanguineous marriages. Because the in-laws are closely related, women might find their complaints to fall on deaf ears, because near kins and relatives won't give credence to the complaints against their own nephew or niece. Eventually, women give up complaining in despair and end their non-acceptance to domestic violence. It is a situation of learned helplessness. A woman suppressed and discouraged within the family in such a way that she is made to think that she has no other option but to continue with the marriage. We, however, do not find any statistically significant evidence.

The modes of acquiring marital partners seem to carry a strong protective effect in the case of love marriages where partners freely choose their partners as compared to parental match-making through arranged marriages. An 18 per cent reduced intensity in violence is associated with the practice of love marriages in comparison to societies where marriages are arranged by parents. An 11 per cent reduction in men endorsing violence is also observed. This supports our hypothesis that lesser is the restriction in marital match-making, the greater are the women's well-being in terms of lesser would be the incidence and endorsement of domestic violence. The match-quality improves with the love marriage, where the couple chooses each other by mutual consent and thereby seemingly more compatible.

There could be three counteracting factors that explain the link between polygyny and domestic violence. First, having more co-wives signify the lower status of women in the society. Wife beating in such a situation would be more likely. Second, since polygyny is permissible in a society, the first with might had grudges against her husband marrying again. Such obstruction from the senior wife might also have caused the havoc and made the senior wife the victim of domestic violence. Third, in polygyny, the husband has an open option to go to other wives in case he is unhappy with one of the wives. This may reduce the chances of beating the wife. We can observe a weakly significant reduction effect on husband's attitude towards domestic violence as reflected in a 25 per cent (column 5) reduction in men supports the idea of wife-beating.

The tendencies among the hunter-gatherer societies to evolve the patrilocal post-marital residency norms were identified in the early works of anthropologists. Since man's role was dominant in the hunting, protecting and encountering in warfare, the norm of the newly-wed residing in the groom's family evolved. In some societies where occupational alternatives were found, especially the societies in contact with the west, altered the traditional role of men and evolved the matrilocal norms where the couple goes and lives with the bride's family. Adapting to environmental condition a flexibility was also evolved as duolocal or neolocal post-marital residency norms, where the couple finds it advantageous. The economic modelling of this traditional custom was theorised more recently (Baker and Jacobsen, 2006). The likelihood of violence increases in ambi/bi/duolocal and neolocal (or ambilocal, bilocal) relative to societies that practice patrilocal post-marital residency norms as far as occurrence and intensity of domestic violence is concerned. Women in such societies are susceptible to the increased level of violence as they seem to accept and tolerate violence relatively more. Intuitively, we find our results reasonable. In comparison to patrilocality, the neolocal or bilocal households, there are no guardians to look after the married couple, and more would be the incidence of violence as compared to a household where the couple cohabits with a larger family of their guardian and in-laws. Since the couple lives outside, it is likely that the husband will be unconstrained to inflict violence and get away with. This is reflected in the 14 per cent (column 5) higher likelihood of men endorsing the violence.

5.3 Separation norms

The marginal effects presented in the panel on separation norms in Table 5 are of the customary norms regarding separation or dissolution of marriage comprise four major traits

that signify and determine the extent to which a women's threat to end a violent and abusive marriage is credible. These are (i) divorce norms, (ii) women's right to alimony and (iii) custody of the child, and (iv) remarriage norms. The categories of divorce norms define the extent to which a married couple can exercise their freedom to end a marriage (a) by mutual consent with frequent divorce rates, or (b) they require society's or family's approval, (c) divorce is rare. In comparison to the societies where there is an absence of social norms regarding divorce and it is open to the civil court, we estimate the correlation between the remaining prevailing divorce norms and occurrence of domestic violence. The estimated coefficients in societies where divorce by mutual consent is prevalent, we find a significant protective effect with respect to each form of domestic violence. The size of the effects is large when seen in comparison to the mean of the violence indices and indicators. The separation norms might indicate whether it is feasible for the woman to exercise her rights towards ending an abusive and violent marriage, especially when she has enhanced 'outside-option' owing to her economic empowerment. The specific separation norms on the degree of ease at which spouses can opt for divorce, child custody rights, entitlement to get maintenance support after divorce, might indicate if it is socially feasible to pose a credible threat of ending the marriage if violence persists. The estimates of the probit model yield a significant effect in terms of violence occurrence and intensity of violence, where society or family needs to be involved and approve the dissolution of marriage.

Whether the husband is required by the prevailing norms to pay for subsistence of his divorced wife is captured in the alimony norms. In the societies where women are assured of their subsistence by way of alimony she is entitled to, an abused wife is unlikely to continue with the marriage. Such alimony norms in favour of women while in a cohabiting relationship may lead to a stronger negotiating position for them, as their 'outside-options' improve(Rangel, 2006). In the event the societal norms grant the abused women with her livelihood subsistence, women are less likely to tolerate the violence and justify in less and fewer scenarios where violence by husband should acceptable. We find the coefficient on alimony norms for the dependent variable violence attitude index statistically significant at the 5 per cent level reflecting a 24 per cent (column 4) reduction in women's endorsement of violence.

The allocation of custody of the child in the event of divorce is considered the amount of marital surplus the parents can appropriate. Whether the custody allocation is contracted

ex-ante or ex-post, it has several consequences to the extent to which parents would invest in their children (Rasul, 2006). If social custom specifies the custody allocation norms prior to the contract of the marriage, it would incentivise parental investment that promotes child quality. In societies where the societal norms are neutral or silent about custody allocation norms, at the time of marriage breakdown, parents would involve themselves in bargaining over child custody along with property, alimony and many other things. The ex-post allocation of custody will keep parents bargaining even if the investment in their children by them is sunk. In this framework, it would be usual to anticipate, irrespective of ex-ante norms that may be assigning the child custody, parents would by and large make it a contentious issue even within marriage or prior to anticipated separation. If by traditional custom, the mother has the custodial rights of children (the marital surplus), it would be the father who would try to use violence on his wife as an instrument to terrify such that she gives up her rights to custody of the children. However, we do not find the coefficients of incidence and intensity of violence statistically significant. As the society assigns the child custody rights to women, women are more empowered and enjoy a better bargaining position within the marriage. Men, therefore, are 15 per cent (column 5) less likely to justify violence and display 42 per cent (column 5) less endorsement to domestic violence. The statistical significance of these coefficients where the father has the custody rights are marginally significant at 10 per cent level. Thus, the direct association between domestic violence and child custody norms are in cases where the father has the custodial rights can, therefore, be disregarded.

Whether or not remarriage of women after a divorce has acceptability in the society matters a lot for the women in case she wishes to exit from an abusive relationship. A flexible and acceptable remarriage after divorce essentially enhances women's outside-option, that she might exercise to get rid of violence in her marriage. Women should enjoy a credible exit option provided she is free and flexible to marry someone without having made to suffer to social stigma after divorce. In a society that does not accept the remarriage of divorced women, the exit options are narrow and limited for women in abusive relationships, where they are compelled to withstand the domestic violence. Endowed with an exit option empowers women with credible exit options and thereby has violence reduction effects. There is a large effect on the endorsement of violence by men at 33 per cent (column 6). These are very large effects compared to the mean of the dependent variables and therefore are important policy triggers.

5.4 Lineage norms

In the panel on lineage norms in Table 5, we analyse the marginal effects to show how the cultural norms surrounding descent, inheritance, and succession, that are matrilineal versus patrilineal in nature, affect or induce domestic violence. Anthropologists advanced a hypothesis that matrilineally is the aboriginal and earliest identifiable stage of kinship structure. The introduction of alienable properties led to the gradual demise of matrilineally and transformation into patrilineality. According to Vansina (1990), matrilineally was invented due to the adoption of agriculture and sedentary villages that called for an institution such that there are fewer heirs when it comes to succession and inheritance. While it is difficult to establish the paternity, the maternity can be easily observed. In environments where there is high paternity uncertainty, the adoption of matrilineally is advantageous. The continuity in descent can be traced through women in matrilineal kinship system. Matrilineally coupled with matrilocality leads women to live closer to her relatives that empower women to gain a greater say in household bargaining framework. The male control and authority over his own children are undermined since they belong to the lineage of the wife. Men in matrilineally faces a puzzling split of allegiance between his and his wife's lineage. When matrilineally is coupled with exogamy, the children in a marriage with a man outside her kin group belongs to the wife's lineage. The notion of male dominance and male authority over his wife and children gives rise to the matrilineal puzzle (Richards et al., 1950). Thus, there would be a decrease in spousal cooperation in matrilineal societies. By marriage, men only get the sexual access to his wife, but not the full authority over her or her children, whose allegiance is split between the marriage and natal kins. Under the assumption of male dominance, faced with conflicting allegiance, it is likely that husbands resort to violence as an instrument to gain control over his wife and children, and cause tension within the marriage. The coefficient of matrilineal descent, where children belong wife's lineage, is positive for violence ever and are statistically significant at 5 per cent level. An 8 per cent increased incidence of violence (column 1) is associated with the tribe practising matrilineal descent norms. This finding is consistent with the 'matrilineal puzzle'.

In matrilineal inheritance system, a pattern of ultimogeniture is observed in our sample, where the youngest daughter inherits the landed properties and they look after their parents at old age. Although the ownership rests with the women, the responsibilities to

management and cultivation of land are handled by men. Women's property status, as argued in Panda and Agarwal (2005), the possession of property and inheritance rights to women would signal the relative strength of women in the society and her credible exit option from an abusive relationship. Thereby, assigning women with property can deter the incidence of domestic violence. We find a statistically significant relationship at 1 per cent level. The precise effect of matrilineal inheritance norms on reduced likelihood of violence as measured by violence index is 30 per cent (column 2). For women in societies that follow matrilineal inheritance, we observe a significant drop of about 26 per cent (column 1) in the likelihood that she would be subjected to violence.

5.5 Settlement patterns

The panel on settlement patterns in Table 5 presents the marginal effects of how differences in ancestral settlement and land ownership patterns are likely to impact women's welfare in a society. Compared to societies that are relatively permanent and compact settlement, in semi-nomadic societies, women, in general, enjoy a greater status as they play important role in the livelihood of the population, but the societal protection of women is difficult to achieve in such types of living arrangements. A 9 per cent reduced acceptance of violence by women(column 3) is consistent with the social control theory (Gelles, 1983; Gelles and Straus, 1988). Similarly, in landless societies compared to the societies where private ownership of land is admissible, women tend to tolerate 16 per cent less of domestic violence (column 3).

6. Robustness

As a robustness check, we re-estimate our model specified in equation (1). The results that we discussed are estimated with the probit model for the dichotomous dependent variables, and Poisson model for count data. Alternatively, we also experiment with the logit model for columns (1), (3), and (5) and negative binomial model for count variables, as reported in column (2), (4) and (6). We did this because there was over-dispersion in violence index and violence attitude index data, that violates the equidispersion assumption of Poisson model. By the likelihood ratio test, we find the dispersion parameter is significantly different from zero, which justifies the use of a negative binomial model. We find the estimated marginal effects are robust over the choice of estimation techniques.

7. Conclusion

We have investigated the link between traditional social norms as well as individual characteristics and incidence of domestic violence and women's attitude towards violence. We have carefully chosen the context of the study in the northeastern region of India, where considerable variation in terms of patriarchic and matriarchic social norms and customs can be observed. We conclude with the following three points.

First, in addition to the individual characteristics, the social norms, especially the traditional norms regarding marriage payments, marital patterns, post-marital residency patterns, separation norms, and lineage norms play a great role in determining the actual outcomes in terms of both incidence of violence and women's attitude towards acceptance of violence. We have shown how and to what extent these traditional social norms can play a role in determining the current violence experienced by women and how they are associated with the women's tolerance of violence.

Second, from the perspective of women's economic empowerment, we considered how women's traditional occupational specialisation can induce or reduce violence against them, given a particular pattern of customs are followed in a society. In the societies where brideprice is paid to acquire a mate, women are valued economically, and therefore, women in brideprice paying societies justifies violence less. Similarly, working women face the lesser probability of violence in exogamous, polygynous, consanguineous, matrilocal, matrilineal, flexible remarriage, and divorce prohibiting societies.

Third, in all the societies in our sample, the economic independence of women supports the lazy men syndrome, even when the prevailing cultural norms seemed tendencies to liberate women more. Even if women's bargaining power should have increased and should have endowed her with a greater say within the household, due to the prevalence of traditional social norms the economic empowerment turns perilous for the working women.

These results are from a sub-section of a society where the traditional customs and social norms are still holding women in its grip from being empowered. Definitely, these results are not the finality on this important, difficult and policy-relevant link among domestic violence, and cultural norms. The underreporting of domestic violence is well known and could have induced measurement errors. The future research might consider dealing with the remaining methodological issues and extend the work to entire India.

8. References

Ackerson, L.K. and Subramanian, S (2008). Domestic violence and chronic malnutrition among women and children in India. *American Journal of Epidemiology,* **167** (10), 1188-1196.

Al-Nsour, M., Khawaja, M. and Al-Kayyali, G. (2009), 'Domestic violence against women in Jordan: evidence from health clinics', *Journal of Family Violence* **24**(8), 569–575.

Alesina, A., Brioschi, B. and Ferrara, E. L. (2016), Violence against women: a cross-cultural analysis for Africa, Technical report, National Bureau of Economic Research.

Alesina, A., Giuliano, P. and Nunn, N. (2013), 'On the origins of gender roles: Women and the plough', *The Quarterly Journal of Economics* **128**(2), 469–530.

Alesina A, Giuliano P, Nunn N. (2018), Traditional Agricultural Practices and the Sex Ratio Today. PLoS ONE.;**13** (1) :e0190510.

Ambrus, A., Field, E. and Torero, M. (2010), 'Muslim family law, prenuptial agreements, and the emergence of dowry in Bangladesh', *The Quarterly Journal of Economics* 1**25(**3), 1349–1397.

Anderson, S. (2003), 'Why dowry payments declined with modernization in Europe but are rising in india', *Journal of Political Economy* **111**(2), 269–310.

Anderson, S. (2007), 'The economics of dowry and brideprice', *The Journal of Economic Perspectives* **21**(4), 151–174.

Anderson, S. (2018), 'Legal origins and female HIV', *American Economic Review* **108**(6), 1407–39.

Anderson, S., Bidner, C. and Sadania, C. (2017), 'Marriage, commitment and social norms: Theory and evidence from Egypt'.

Ansell, N. (2001), ''because it's our culture!'(re) negotiating the meaning of Lobola in southern african secondary schools', *Journal of Southern African Studies* **27**(4), 697–716.

Anukriti, S. and Dasgupta, S. (2017), 'Marriage markets in developing countries'.

Baker, M. J. and Jacobsen, J. P. (2006), 'A human capital-based theory of postmarital residence rules', *The Journal of Law, Economics, & Organization* **23**(1), 208–241.

Barnard, A. and Spencer, J. (2009), *The Routledge encyclopaedia of social and cultural anthropology*, Routledge.

Bates, L. M., Schuler, S. R., Islam, F. and Islam, M. K. (2004), 'Socioeconomic factors and

processes associated with domestic violence in rural Bangladesh', *International family planning perspectives* pp. 190–199.

Bau N, Nunn N, Voena A, Ashraf N. Bride Price and Female Education. *Journal of Political Economy*. 2019 :forthcoming.

Becker, G. (1981), 'A treatise on the family' Harvard university press', Cambridge, MA 30.

Bishai, D. and Grossbard, S. (2010), 'Far above rubies: Bride price and extramarital sexual relations in Uganda', *Journal of Population Economics* **23**(4), 1177–1187.

Bloch, F. and Rao, V. (2002), 'Terror as a bargaining instrument: A case study of dowry violence in rural India', *The American Economic Review* **92**(4), 1029–1043.

Boserup, E. (1970), 'Women's role in development', *London: Earthscan*.

Chiappori, P.-A., Fortin, B. and Lacroix, G. (2002), 'Marriage market, divorce legislation, and household labor supply', *Journal of political Economy* **110**(1), 37–72.

Chiappori, P.-A., Salanié, B. and Weiss, Y. (2017), 'Partner choice, investment in children, and the marital college premium', *American Economic Review* **107**(8), 2109–67.

Dow, G. K., Reed, C. G. and Woodcock, S. (2016), 'The economics of exogamous marriage in small-scale societies', *Economic Inquiry* **54**(4), 1805–1823.

Duflo, E. (2003), 'Grandmothers and granddaughters: old-age pensions and intrahousehold allocation in South Africa', *The World Bank Economic Review* 17(1), 1–25.

Fearon, J. D. and Laitin, D. D. (1996), 'Explaining interethnic cooperation', *American political science review* **90**(4), 715–735.

Flake, D. F. (2005), 'Individual, family, and community risk markers for domestic violence in Peru', *Violence against women* **11**(3), 353–373.

Friedberg, L. (1998), Did unilateral divorce raise divorce rates? evidence from panel data, Technical report, National Bureau of Economic Research.

Gelles, R. J. (1983), 'An exchange/social control theory', The dark side of families: Current family violence research pp. 151–165.

Gelles, R. J. and Straus, M. A. (1988), 'Intimate violence: The definitive study of the causes and consequences of abuse in the american family', New York: Simon & Schuster.

Gray, J. S. (1998), 'Divorce-law changes, household bargaining, and married women's labor supply', *The American Economic Review* **88**(3), 628–642.

Heise, L. L. (1998), 'Violence against women: an integrated, ecological framework', *Violence against women* **4**(3), 262–290.

Hewlett, B. and Stone, L. (2001), 'New directions in anthropological kinship', N*e w Directions in Anthropological Kinship*.

Hindin, M. J. and Adair, L. S. (2002), 'Who's at risk? factors associated with intimate partner violence in the Philippines', *Social Science & Medicine* **55**(8), 1385–1399.

International Institute for Population Sciences (2007), India National Family Health Survey (NFHS-3), 2005-06, Vol. 1, International Institute for Population Sciences.

Jewkes, R., Levin, J. and Penn-Kekana, L. (2002), 'Risk factors for domestic violence: findings from a South African cross-sectional study', *Social science & medicine* **55**(9), 1603–1617.

Koenig, M. A., Stephenson, R., Ahmed, S., Jejeebhoy, S. J. and Campbell, J. (2006), 'Individual and contextual determinants of domestic violence in north india, *American journal of public health* **96**(1), 132–138.

Koenig, M., Ahmed, S. and Haaga, J. (1999), 'Individual and community-level determinants of domestic violence in rural Bangladesh'. Hopkins Population Center Papers on Population WP 99-04.

Leyaro, V. and Selaya, P. (2017), 'Culture of violence against women: Evidence from a field experiment in Tanzania'.

Michalopoulos, S. and Papaioannou, E. (2013), 'Pre-colonial ethnic institutions and contemporary african development', *Econometrica* **81**(1), 113–152.

Moscona J, Nunn N, Robinson JA. (2017) Keeping It in the Family: Lineage Organization and the Scope of Trust in Sub-Saharan Africa. *American Economic Review Papers and Proceedings*. 2017;**107** (5) :565-571.

Mulder, M. B. (1995), 'Bridewealth and its correlates: quantifying changes over time', *Current Anthropology* **36**(4), 573–603.

Murdock, G. P. (1967), 'Ethnographic atlas: a summary', *Ethnology* **6**(2), 109–236.

Nunn, N. (2005), 'A model explaining simultaneous payments of dowry and brideprice', Unpublished paper. *http://www.econ.ubc.ca/nnunn/dowries.pdf* .

Nunn, N. and Qian, N. (2011), 'The potato's contribution to population and urbanization: evidence from a historical experiment', *The Quarterly Journal of Economics* **126**(2), 593–650.

Panda, P. and Agarwal, B. (2005), 'Marital violence, human development and women's property status in india', *World development* **33**(5), 823–850.

Peters, H. E. (1986), 'Marriage and divorce: Informational constraints and private contracting', *The American Economic Review* **76**(3), 437–454.

Rangel, M. (2006), 'Alimony rights and intrahousehold allocation of resources: Evidence from Brazil', *The Economic Journal* **116**(513), 627–658.

Rao, V. (1993), 'The rising price of husbands: A hedonic analysis of dowry increases in rural India', *Journal of political Economy* **101**(4), 666–677.

Rasul, I. (2006), 'The economics of child custody', *Economica* **73**(289), 1–25.

Richards, A. I., Radcliffe-Brown, A. and Forde, D. (1950), 'African systems of kinship and marriage', chapter" Some Types of Family Structure Amongst the Central Bantu pp. 207–251.

Ritzer, G. (2007), 'The Blackwell Encyclopedia of sociology', *Mathematical Monthly* **107**(7), 615–30.

Singh, K. S., Pakem, B., Roy, S. and Basu, A. (1994), 'People of india: Meghalaya (voll.-xxxii)'.

Straus, M. A. and Hotaling, G. T. (1980), *The social causes of husband-wife violence,* Citeseer.

Tertilt, M. (2005), 'Polygyny, fertility, and savings', *Journal of Political Economy* 113(6), 1341–1371.

Tur-Prats, A. (2015), 'Family types and intimate-partner violence: A historical perspective'.

Vansina, J. M. (1990), *Paths in the rainforests: toward a history of political tradition in equatorial Africa*, University of Wisconsin Press.

Wendo, C. (2004), 'African women denounce bride price', *The Lance*t **363**(9410), 716.

Wolfers, J. (2006), 'Did unilateral divorce laws raise divorce rates? a reconciliation and new results', *American Economic Review* **96**(5), 1802–1820.

World Bank. (2017), World development indicators 2017, World Bank Publications.

World Health Organisation. (2014) ed. Butchart, A. and Mikton, C.'Global status report on violence prevention, 2014'.

9. Tables

Table 1: Matching NFHS ethnicities to People of India Ethnographic Atlas

	Women's Sample			
matching method	Number of Observations	Percentage of observations	Number of ethnicities	percentage of ethnicities
Direct matching	8370	41.36%	107	58.79%
Spelling variations	15981	78.97%	162	89.01%
differences in nomenclature	1477	7.30%	3	1.65%
Varna system	1429	7.06%	5	2.75%
Not matched/ Misspecified	2245	11.09%	...	...
	Men's Sample			
Direct matching	6354	52.70%	129	70.88%
Spelling variations	9174	76.09%	121	66.48%
differences in nomenclature	182	1.51%	2	1.10%
Varna system	809	6.71%	5	2.75%
Not matched/ Misspecified	1430	11.86%	...	...

Table 2: Summary Statistics of measures of domestic violence

	Women's Sample				
	Mean	Std. Dev	Min	Max	N
Actual violence experienced					
Violence ever	0.32	0.47	0	1	7474
Violence index	0.56	0.96	0	4	7474
Women's Attitude towards violence					
Violence attitude	0.64	0.48	0	1	14588
Violence attitude index	1.57	1.53	0	5	14588
Women justified violence if the wife					
goes out without telling	0.38	0.49	0	1	14262
neglect the children	0.58	0.49	0	1	14276
argues with the husband	0.33	0.47	0	1	14006
refuses to have sex	0.14	0.35	0	1	13663
burns food	0.18	0.39	0	1	14213
	Men's Sample				
	Mean	Std. Dev	Min	Max	N
Men's Attitude towards violence					
Violence attitude	0.57	0.50	0	1	8445
Violence attitude index	1.23	1.38	0	5	8445
Men justified violence if the wife					
goes out without telling	0.27	0.44	0	1	8269
neglect the children	0.49	0.49	0	1	8302
argues with the husband	0.29	0.46	0	1	8203
refuses to have sex	0.09	0.28	0	1	8139
burns food	0.11	0.31	0	1	8337

Table 3a: Summary Statistics of Explanatory Variables

	Women's sample					Men's sample				
Cultural Norms	Mean	Std. Dev.	Min	Max	N	Mean	Std. Dev.	Min	Max	N
Marriage payments	0.78	0.70	0	3	14588	0.78	0.74	0	3	8445
Exogamy	1.59	1.03	0	3	14588	1.67	1.03	0	3	8445
Intrafamily marriages	0.36	0.48	0	1	14588	0.34	0.47	0	1	8445
Polygyny	0.02	0.15	0	1	14588	0.02	0.14	0	1	8445
Marriage symbols	0.92	0.27	0	1	14588	0.93	0.26	0	1	8445
Marriage types	1.40	0.86	0	2	14588	1.42	0.88	0	2	8445
Post-marital residency	0.51	0.87	0	2	14588	0.75	1.24	0	3	8445
Divorce norms	1.84	0.99	0	3	14588	1.99	0.99	0	3	8445
Alimony rights	0.18	0.38	0	1	14588	0.14	0.35	0	1	8445
Child custody rights	0.72	0.88	0	2	14588	0.56	0.85	0	2	8445
Remarriage norms	0.81	0.39	0	1	14588	0.73	0.44	0	1	8445
Descent norms	0.14	0.34	0	1	14588	0.10	0.30	0	1	8445
Inheritance norms	0.51	0.69	0	2	14588	0.40	0.60	0	2	8445
Land ownership	0.19	0.49	0	2	14588	0.18	0.46	0	2	8445
Settlement patterns	0.39	0.53	0	2	14588	0.32	0.50	0	2	8445

Table 3b: Summary Statistics of Control Variables

	Women's sample					Men's sample				
control variables	Mean	Std. Dev.	Min	Max	N	Mean	Std. Dev.	Min	Max	N
Age (years)	28.71	9.30	15	49	14588	30.62	10.78	15	54	8445
Education (years)	6.69	4.68	0	21	14587	8.22	4.44	0	23	8442
Wealth Index	3.49	1.18	1	5	14588	3.48	1.13	1	5	8445
Household size	5.81	2.42	1	20	14588	5.79	2.47	1	17	8445
Urban	0.39	0.49	0	1	14588	0.40	0.49	0	1	8445
History of violence	0.18	0.38	0	1	9197	0.21	0.41	0	1	7817
Family structure	0.56	0.50	0	1	14265	0.57	0.50	0	1	8283
Alcoholic partner	0.53	0.50	0	1	7478	0.46	0.50	0	1	8445
Use of plough	0.29	0.45	0	1	14588	0.33	0.47	0	1	8445
Subsistence:agriculture	0.94	0.23	0	1	14588	0.96	0.19	0	1	8445
Subsistence:gathering	0.98	0.13	0	1	14588	0.99	0.10	0	1	8445
Subsistence: hunting & fishing	0.82	0.38	0	1	14588	0.86	0.35	0	1	8445
Subsistence: husbandry & pastoralism	0.73	0.44	0	1	14588	0.81	0.39	0	1	8445
female role in agriculture & gathering	0.89	0.31	0	1	14588	0.93	0.25	0	1	8445
female role in hunting& fishing	0.21	0.41	0	1	14588	0.21	0.41	0	1	8445
female role in husbandry & pastoralis	0.47	0.50	0	1	14588	0.43	0.49	0	1	8445
female role in handicraft	0.53	0.50	0	1	14588	0.53	0.50	0	1	8445
female role in politics	0.32	0.47	0	1	14588	0.37	0.48	0	1	8445

Table 4: Prevalence of cultural norms

Cultural Norms	Women's sample tribes	Women's sample N	Men's sample tribes	Men's sample N
1. Marriage Payments		**14588**		**8445**
Neither Brideprice nor Dowry	27	4943	27	2990
Only Brideprice	79	8381	79	4724
Only Dowry	7	733	7	315
Both Brideprice and Dowry	5	531	5	416
2. Exogamy		**14588**		**8445**
Endogamy	19	1242	19	576
Clan Exogamy	80	8228	80	4609
Community Exogamy	8	450	8	255
Two or more types of exogamy	11	4668	11	3005
3. Intrafamily Marriages		**14588**		**8445**
No consanguinity	59	9287	59	5598
First Cousin (FSD/MBD) / Sororate/Levirate	59	5301	59	2847
4. Polygyny		**14588**		**8445**
Monogamy	114	14272	114	8278
Polygyny	4	316	4	167
5. Marriage Symbols		**14588**		**8445**
No marriage symbols	17	1144	17	615
Ornaments/Vermilion/Veil	101	13444	101	7830
6. Marriage Types		**14588**		**8445**
Arranged Marriage	56	3703	56	2224
Love Marriage	7	1332	7	491
Both Arranged and Love Marriages	55	9553	55	5730
7. Post-Marital Residency Norms		**14588**		**8445**
Patri/Virilocal	94	10802	94	6099
Matri/Uxorilocal	3	101	3	37
Ambi/Bi/Duolocal/ Neolocal	21	3685	21	2309
8. Divorce Rules		**14588**		**8445**
Civil court divorce	7	728	7	273
Mutual Consent	59	6341	59	3400
Society's/Family's Approval	26	2066	26	941
Divorce is rare and discouraged	26	5453	26	3831
9. Almony Rights		**14588**		**8445**
No	81	11997	81	7263
Yes	37	2591	37	1182
10. Child Custody Rights		**14588**		**8445**
Father keeps	39	8290	39	5671
Mother keeps	11	2061	11	779
Situational/Either keeps	68	4237	68	1995
11. Remarriage Norms		**14588**		**8445**
Not acceptable & rigid	7	2736	7	2274
Acceptable & flexible	111	11852	111	6171
12. Descent		**14588**		**8445**
Patrilineal	109	12603	109	7608
Matrilineal	9	1985	9	837
13. Inheritance		**5943**		**8445**
equigeniture	85	8645	85	5489
male inheritance	28	4238	28	2349
female inheritance	5	1705	5	607
14. Plough		**14588**		**8445**
Plough is absent	78	10345	78	5631
Plough existed/aboriginal in society	40	4243	40	2814

Continued...Table 4

Cultural Norms	Women's sample tribes	Women's sample N	Men's sample tribes	Men's sample N
15. Dependence on Agriculture		**14588**		**8445**
No	12	833	12	326
Yes	106	13755	106	8119
16. Dependence on Gathering		**14588**		**8445**
No	4	235	4	91
Yes	114	14353	114	8354
17. Dependence on Hunting		**14588**		**8445**
No	78	8399	78	4563
Yes	40	6189	40	3882
18. Dependence on Fishing		**14588**		**8445**
No	53	3587	53	1890
Yes	65	11001	65	6555
19. Dependence on Husbandry		**14588**		**8445**
No	41	6565	41	3723
Yes	77	8023	77	4722
20. Dependence on Pastoralism		**14588**		**8445**
No	65	6026	65	3088
Yes	53	8562	53	5357
21. Female participation in Agriculture		**14588**		**8445**
No	13	2617	13	1175
Yes	105	11971	105	7270
22. Female participation in Gathering		**14588**		**8445**
No	19	3960	19	1431
Yes	99	10628	99	7014
23. Female participation in Hunting		**14588**		**8445**
No	117	14577	117	8440
Yes	1	11	1	5
24. Female participation in Fishing		**14588**		**8445**
No	88	11512	88	6638
Yes	30	3076	30	1807
25. Female participation in Husbandry		**14588**		**8445**
No	62	7776	62	4824
Yes	56	6812	56	3621
26. Female participation in Pastoralism		**14588**		**8445**
No	113	14320	113	8344
Yes	5	268	5	101
27. Female participation in Weaving		**14588**		**8445**
No	63	7374	63	4198
Yes	55	7214	55	4247
28. Female participation in Basketry		**14588**		**8445**
No	84	11181	84	6661
Yes	34	3407	34	1784
29. Female participation in Politics		**14588**		**8445**
No	105	9963	105	5350
Yes	13	4625	13	3095
30. Land ownership patterns		**14588**		**8445**
Private ownership of land	90	12487	90	7205
Society/Community	18	1466	18	982
Landless	10	635	10	258
31. Settlements patterns		**14588**		**8445**
Compact/Relatively Permanent	55	9152	55	5891
Separated Hamlets/Semi-permanent/ Neighbourhoods dispersed family households	60	5160	60	2428
Seminomadic 1/2 year; or Semisedentary	3	276	3	126

Table 5:Cultural Norms and Domestic Violence

Dependent variable:	**Women's sample**				**Men's sample**	
	Violence Ever	Violence Index	Violence Attitude	Violence Attitude Index	Violence Attitude	Violence Attitude Index
	Probit	Poisson	Probit	Poisson	Probit	Poisson
	(1)	(2)	(3)	(4)	(5)	(6)
	Marriage Payments					
Marriage payments (reference category: neither brideprice nor dowry)						
Only **brideprice**, no dowry	0.029	0.135**	-0.115***	-0.351**	-0.195***	-0.717***
	(0.031)	(0.062)	(0.043)	(0.169)	(0.045)	(0.215)
Only **dowry**, no brideprice	0.027	0.149	0.040	0.529	0.038	0.442
	(0.053)	(0.108)	(0.061)	(0.425)	(0.077)	(0.638)
Both **brideprice and dowry**	-0.078	-0.190**	-0.264***	-0.804***	-0.218***	-0.353*
	(0.058)	(0.085)	(0.078)	(0.169)	(0.081)	(0.202)
	Marriage Regulations					
Exogamy (reference category: endogamy)						
Clan Exogamy	0.050	0.130**	0.110**	0.321**	-0.100**	-0.625**
	(0.039)	(0.059)	(0.056)	(0.156)	(0.048)	(0.259)
Community Exogamy	0.096	0.267**	0.259***	0.696***	0.029	0.087
	(0.065)	(0.129)	(0.078)	(0.261)	(0.077)	(0.407)
Multiple exogamy	0.063	0.187**	0.184**	0.493**	-0.153**	-1.046***
	(0.059)	(0.092)	(0.082)	(0.230)	(0.070)	(0.357)
Intrafamily Marriages(reference category:no consanguinity)						
Consanguinity(Father's Sister's Daughter/Mother's Brother's Daughter/Sororate/Levirate)	0.006	0.001	0.022	-0.040	0.046	-0.108
	(0.026)	(0.049)	(0.032)	(0.110)	(0.037)	(0.106)
Marriage Types (reference category: arranged marriage)						
Love Marriage	-0.031	-0.175***	0.091	0.411*	-0.107*	-0.105
	(0.039)	(0.063)	(0.058)	(0.248)	(0.064)	(0.163)
Both Arranged and love Marriages	0.029	0.031	0.038	0.192**	-0.020	0.152
	(0.022)	(0.044)	(0.032)	(0.093)	(0.040)	(0.113)
Marriage Symbols (reference category: no marriage symbols)						
Marriage Symbols (Ornaments/Vermillion/Veil)	-0.032	-0.100	0.083*	0.288**	0.106*	0.301*
	(0.034)	(0.076)	(0.048)	(0.138)	(0.061)	(0.165)
Polygyny is acceptable=1, monogamy=0	-0.071	-0.137	-0.071	-0.351	-0.254***	-0.608**
	(0.062)	(0.122)	(0.075)	(0.261)	(0.069)	(0.239)
Post-Marital Residency Norms (reference category: Patri/Virilocal)						
Matri/Uxorilocal	-0.028	-0.070	-0.048	-0.056	-0.166	-0.452
	(0.040)	(0.081)	(0.134)	(0.565)	(0.303)	(0.748)
Ambi/Bi/Duo/Neolocal	0.158***	0.451***	0.124***	0.510***	0.138***	0.464***
	(0.035)	(0.116)	(0.033)	(0.144)	(0.038)	(0.145)

Continued... Table 5

Dependent variable:	**Women's sample**				**Men's sample**	
	Violence Ever	Violence Index	Violence Attitude	Violence Attitude Index	Violence Attitude	Violence Attitude Index
	Probit (1)	Poisson (2)	Probit (3)	Poisson (4)	Probit (5)	Poisson (6)
	Separation Norms					
Divorce Rules (reference category: Civil court divorce)						
Divorce by mutual consent	-0.067	-0.116	-0.084	-0.305	-0.077	0.047
	(0.049)	(0.104)	(0.054)	(0.328)	(0.069)	(0.196)
Divorce by Society's/Family's Appro	-0.136***	-0.279***	-0.078	-0.271	-0.111	0.129
	(0.048)	(0.101)	(0.056)	(0.308)	(0.068)	(0.184)
Divorce is rare and discouraged	-0.034	-0.018	-0.039	-0.313	0.099	0.460**
	(0.043)	(0.093)	(0.052)	(0.302)	(0.071)	(0.214)
Wife is entitled to alimony=1; 0= not entitled	0.027	0.034	0.013	-0.238**	0.053	0.220
	(0.023)	(0.043)	(0.031)	(0.117)	(0.045)	(0.135)
Child Custody Customs (reference category: Neutral/ No ex-ante custody rules)						
Father keeps children	0.029	0.018	0.026	0.223*	-0.018	0.006
	(0.028)	(0.057)	(0.037)	(0.121)	(0.043)	(0.124)
Mother keeps children	0.043	-0.037	-0.092	-0.261	-0.153**	-0.416*
	(0.051)	(0.083)	(0.059)	(0.193)	(0.070)	(0.218)
Remarriage of divorced/widow is acceptable=1, zero else	-0.041	-0.100	-0.047	-0.237	-0.058	-0.335**
	(0.052)	(0.093)	(0.063)	(0.173)	(0.060)	(0.138)
	Lineage Norms					
Matrilineal descent=1, Patrilineal descent=0	0.084**	0.100	-0.050	-0.041	-0.035	-0.143
	(0.038)	(0.091)	(0.048)	(0.187)	(0.054)	(0.163)
Inheritance (reference category: equigeniture)						
male inheritance	-0.081**	-0.180***	0.003	0.144	0.027	0.110
	(0.033)	(0.064)	(0.040)	(0.134)	(0.048)	(0.135)
Female inheritance	-0.258***	-0.300**	-0.060	-0.116	-0.139	-0.285
	(0.062)	(0.123)	(0.140)	(0.443)	(0.118)	(0.227)
	Settlement Patterns					
Settlement patterns (reference category: compact, relatively permanent)						
Separated Hamlets/Semi-permanent/ Neighbourhoods dispersed households	-0.006	-0.014	-0.011	-0.023	-0.032	0.027
	(0.022)	(0.045)	(0.030)	(0.105)	(0.038)	(0.108)
Semi-nomadic 1/2 year; Semi-sedentary settlement	-0.091	-0.134	0.092*	0.018	-0.105*	0.435
	(0.062)	(0.132)	(0.055)	(0.241)	(0.058)	(0.272)
Land ownership (reference category: Private ownership of land)						
Society/Community Ownership of land	-0.003	-0.003	-0.015	0.080	0.063**	0.186*
	(0.032)	(0.062)	(0.049)	(0.152)	(0.032)	(0.109)
Landless/ marginal societies	-0.071**	-0.117**	-0.164**	-0.449**	0.050	0.160
	(0.036)	(0.053)	(0.075)	(0.220)	(0.077)	(0.424)

Continued... Table 5

	Women's sample				Men's sample	
Dependent variable:	Violence Ever	Violence Index	Violence Attitude	Violence Attitude Index	Violence Attitude	Violence Attitude Index
	Probit (1)	Poisson (2)	Probit (3)	Poisson (4)	Probit (5)	Poisson (6)
Control variables:Community Level						
Plough is used in agriculture=1; 0=plough is absent	-0.003 (0.021)	-0.056 (0.041)	-0.089*** (0.030)	-0.275*** (0.102)	-0.091** (0.035)	-0.344*** (0.117)
Dependence on agriculture(dummy)	-0.054 (0.042)	-0.154** (0.077)	0.032 (0.058)	-0.078 (0.261)	0.030 (0.089)	-0.037 (0.409)
Dependence on gathering(dummy)	0.033 (0.057)	-0.077 (0.114)	-0.025 (0.077)	-0.146 (0.290)	-0.198** (0.078)	-0.631** (0.270)
Dependence on hunting & fishing(dummy)	-0.082*** (0.028)	-0.166*** (0.055)	0.020 (0.036)	-0.029 (0.142)	-0.066* (0.040)	-0.096 (0.133)
Dependence on husbandry & pastoralism(dummy)	-0.036 (0.033)	-0.021 (0.065)	0.051 (0.048)	0.264 (0.206)	0.103** (0.050)	0.387*** (0.115)
Female participation in agriculture & gathering(dummy)	-0.019 (0.035)	-0.016 (0.065)	-0.046 (0.041)	0.022 (0.175)	0.075 (0.051)	0.433** (0.197)
Female participation in hunting & fishing(dummy)	0.073*** (0.026)	0.091** (0.046)	0.036 (0.034)	0.287** (0.132)	0.018 (0.042)	0.351** (0.137)
Female participation in husbandry & pastoralism(dummy)	0.006 (0.029)	0.067 (0.059)	0.076** (0.032)	0.232** (0.115)	0.137*** (0.048)	0.331* (0.171)
Female participation in handicrafts(dummy)	-0.031 (0.030)	-0.082 (0.062)	-0.099** (0.041)	-0.448*** (0.128)	0.045 (0.043)	0.097 (0.149)
Female participation in politics(dummy)	-0.021 (0.034)	-0.086 (0.072)	-0.195*** (0.047)	-0.794*** (0.162)	-0.140** (0.055)	-0.342** (0.171)
Control variables:Individual Level						
Age in years	-0.000 (0.001)	0.001 (0.001)	-0.001** (0.001)	-0.003 (0.002)	-0.003*** (0.001)	-0.006*** (0.002)
Education in years	-0.007*** (0.002)	-0.016*** (0.004)	-0.004** (0.002)	-0.020*** (0.006)	-0.007*** (0.002)	-0.021*** (0.004)
Household size	0.003 (0.003)	0.007 (0.008)	0.003 (0.003)	0.016 (0.011)	-0.001 (0.003)	-0.009 (0.006)
Wealth index	-0.023*** (0.008)	-0.067*** (0.016)	-0.030*** (0.009)	-0.120*** (0.029)	-0.020* (0.011)	-0.082*** (0.028)
Urbanity	0.030* (0.015)	0.090** (0.035)	0.017 (0.017)	-0.046 (0.053)	-0.005 (0.020)	-0.042 (0.068)
Witnessed parental violence	0.168*** (0.011)	0.282*** (0.027)	0.083*** (0.030)	0.275*** (0.092)	0.110*** (0.023)	0.327*** (0.055)
Nuclear/stem family	0.012 (0.016)	0.009 (0.026)	0.004 (0.011)	-0.032 (0.041)	-0.018 (0.016)	-0.093** (0.038)
Alcoholism	0.168*** (0.015)	0.402*** (0.051)	0.027** (0.012)	0.057 (0.040)	0.038*** (0.013)	0.093** (0.043)
Number of communities (clusters)	118	118	118	118	118	118
Mean dependent variable	0.32	0.56	0.64	1.57	0.57	1.23
Observations	6766	6766	6772	6772	7667	7667

*Notes:*Cluster robust standard errors are reported in the parenthesis. ***, **, * denote statistical significance at the 1, 5 and 10 per cent levels, respectively. The marginal effects of Probit and Poisson models are shown in columns (1) to (6). The columns (1) to (4) pertains to women's sample and columns (5) and (6) represents men's sample.

10. Appendix

A1 Definition and description of dependent variables

In order to ascertain the kinds of violence inflicted on women by men, women's answers to the following questions were considered in NFHS-3: (i) Spouse ever humiliated her, (ii) Spouse ever threatened her with harm, (iii)Spouse ever insult or make feel bad; (iv) Spouse ever pushed, shook or threw something, (v) Spouse ever slapped, (vi) Spouse ever punched with fist or something harmful, (vii) Spouse ever kicked or dragged, (viii) Spouse ever twisted her arm or pull her hair; (ix) Spouse ever tried to strangle or burn, (x) Spouse ever threatened or attacked with knife/gun or other weapon, (xi) Spouse ever attacked with knife; (xii) Spouse ever physically forced sex when not wanted, (xiii) Spouse ever forced other sexual acts.

(i) **Violence ever** is a dummy variable to capture if any types of violence ever has been inflicted on the woman. This dummy variable is called 'violence ever' to capture if the woman was subjected to at least one form of domestic violence.

(ii) **'Violence index'** is constructed as sum of four types of domestic violence to which the woman has been exposed, namely, (a) emotional violence if the response was affirmative in questions (i) to (iii) above , (b) physical violence if the response was affirmative in questions (iv) to (xi) above, and (d) sexual violence if the response was affirmative in questions (xii) to (xiii) above. The sum of each forms of violence is captured in violence index. This is a count data ranging between 0 and 4.

Next, we use the data to construct a set of attitudinal measures towards domestic violence and women, in particular. This attempts to measure to what extent the women respondents justify the violence inflicted by their husbands on them. A confirmation was obtained from women respondent those justify violence in one of the following situation, (a) the wife goes out without telling him, (b) the wife neglects their children, (c) the wife argues with him, (d) the wife refuses to have sex with him, and (e) the wife burns the food.

(iii) **Violence Attitude** is a dummy variable that takes the value 1 if the respondent woman believes that domestic violence is justified in at least one of the five circumstances emerge.

(iv) **Violence Attitude Index** is constructed as sum of affirmative responses in which the respondent women justifies and accepts the domestic violence inflicted on her.This is a count data ranging between 0 and 5.

A2 Definition and description of control variables

We use a set of usual control variables in all of our regression specifications to capture the individual characteristics of both men and women, as available in NFHS-3. Variables, such as, age and education for both women and men are measured in years. The Wealth Index is a measure of various indicators available in the dataset are generated by using the principal component analysis which places the respondent on the wealth distribution reflective of relative position in terms of economic status depending on which of the five quintile they belong to. This variable is readily available in NFHS-3, which is calculated using data on a household's ownership of certain assets, the house construction material, access to water and sanitation. Household size indicates the number of persons lived in the household as of preceding night before the data was collected. Urbanity reports the location of the household in the rural and urban areas indicating the location effects to capture the unobserved heterogeneity between the urban and rural areas. It takes a value 1 if location is urban, and 0 otherwise. History of violence is a binary variable that indicates whether wife has witnessed parental violence in her childhood. Household structure is a binary variable that takes a value 1 if the the household is nuclear, 0 otherwise. Alcoholism captures the habit of drinking alcohol among the marital partners. In addition, agro-pastoral subsistence and women's role in subsistence activities are also used as controls.

A3 Definition and description of cultural norms

1. **Marriage Payments** is a categorical variable with the following custom coded as: 0 is Neither Brideprice nor Dowry: Absence of any significant consideration of goods, money or any kind in a social marriage norm. Such societies observe no exchange of money or any kind from either side.; 1 is O*nly Brideprice:* Transfer of substantial consideration in the form of livestock, goods or money from the groom to the kinsmen of the bride. It is simple presentations of any wealth or kind, which the family of the groom must give to the family of the bride. ; 2 is *Only Dowry:* Transfer of substantial consideration in the form of livestock, goods or money from bride's to the kinsmen of the groom. It is simple presentations of any wealth or kind, which the family of the bride must give to the family of the groom; 3 is *Both Brideprice and Dowry*: Practice of social norm in marriage patterns in societies where both Dowry and Brideprice are observed. (Barnard and Spencer, 2009).

2. **Types of Exogamy** is a categorical variable with the following social norms coded as 0 is Endogamy is a norm of marriage observed within the same clan/community. It demands the marriage to take place which the same group or locale. (Murdock, 1967); 1 is Clan Exogamy, which is a norm of marriage and is observed when the marriage partner is selected, i.e. either bride or groom, from outside of the clan/band. (Murdock, 1967) (Ritzer, 2007); 2 is Community Exogamy which is a norm of marriage and is observed when the marriage partner is selected, i.e. either bride or groom, from outside of the community settlement. (Murdock, 1967) 1. (Barnard and Spencer, 2009); 3 is multiple exogamy, such marriage norms are observed when more than one type of marriage norm is prevalent in one village or community. For example, A village observing both clan exogamy and village endogamy will fall under this category. (Barnard and Spencer, 2009) (Murdock, 1967).

3. **Intrafamily Marriage** is a categorical variable with the following traditions codes as 0 is No consanguinity, where the selection of marriage partner is completely avoided within the lineage of either father's side or mother's side. Societies following no consanguineous marriage, do not encourage cross: cousin marriage as well. (Murdock, 1967) (Barnard and Spencer, 2009); 1 is Cross-Cousin (FSD/MBD), where it is observed as the Unilateral Marriage pattern within either father's or mother's lineage. For example, Marriage with Father's Sister Daughter or Mother's brother's daughter etc. (Murdock, 1967) or alternatively, Sororate/levirate marriage is practiced that a widower can marry the sister of his deceased wife and a marriage norm where a widow can marry the brother of her deceased husband respectively (Murdock, 1967).

4. **System of Marriage** is a binary variable that captures traditional pattern coded as 0 is Monogamy, is marriage pattern where only one marriage partner/wife is selected. Simply, marriage of one male to one female at a time. (Murdock, 1967) (Ritzer, 2007); 1 is Polygyny is a marriage pattern under polygamy where a single man can marry more than one woman and may occupy the household with co: wives. Sororal polygyny suggest marriage of one male to a group of sisters (Barnard and Spencer, 2009) (Ritzer, 2007).

5. **Marriage Symbols** is a categorical variable that captures the following customs coded as 0 is *no symbol for marriag*e is observed during or after marriage; 1 is *ornaments or vermillion or veil,* where symbolic jewellery worn by either gender to symbolise marriage or a red powder is used on the forehead by females 5. here a peculiar marriage symbol, worn generally by married women to cover their faces from social pragmatics.

6. Marriage Types is a categorical variable that captures the following pattern coded as 0 is *Arranged Marriage:* It a selection process of a marriage partner which is done generally by the consent of parents and their mutual negotiation. The bride and groom have a very less say in it. (Murdock, 1967) (Barnard and Spencer, 2009); 1 is *Intimate Marriage*: In this, the marriage partner is selected by the individuals, both males and females select the co: partner with their own consent, through affection, mutual consent etc. (Murdock, 1967); 2 is *Both Arranged and Intimate Marriages*: Such marriage patterns are observed within a society where it allows both, marriage by familial consent as well as gives freedom to individuals to select their own marriage partner (Murdock, 1967) (Barnard and Spencer, 2009).

7. Post-Marital Residency is a categorical variable that captures the following traditional patterns coded as, 0 is *Patri/Virilocal:* A residence norm after marriage with or near the male patrilineal kinsmen of the husband. It can be also suggested that the Marriage norm in the father's place of residence. It is generally observed in a patrilineal society. In some loose sense, it is also referred to as Virilocal. (Murdock, 1967) (Barnard and Spencer, 2009); 1 is *Matri/Uxorilocal* is a residence norm after marriage with or near the female matrilineal kinsmen of the wife. It can be also suggested that the Marriage norm in the mother's place of residence. It is generally observed in a matrilineal society. In some loose sense, it is also referred to as Uxorilocal. (Murdock, 1967) (Barnard and Spencer, 2009). 2 is *Ambi/Bi/Neo/Duolocal:* is the residence established optionally with or near the parents of either the husband or wife; depending upon circumstances or personal choice. Duolocal residence suggests both bride and groom can reside in their own respective natal home. (Barnard and Spencer, 2009).

8. Divorce Rules is a categorical variable that captures the following social norms observed in different societies for granting divorce among the couples, coded as, 0 is *Civil Court*, where married couples seek to legal body for divorce filings in the societies, 1 is *Mutual Consent*, when Couples consider divorce by mutual communication and decision; 2 is *Society/Family Approval*, when Divorce is granted by the society's/family's agreement and 3 is *divorces are rare and discouraged*, where divorce rules are rigid and doesn't permit the couples to divorce.

9. Alimony Rights is a binary variable that captures a social norm that is coded as 1 if a wife is entitled to receive compensation from her husband after divorce, and coded as 0 otherwise.

10. Child Custody Rights is a categorical variable that captures a social norm that decides who of the divorcing parents get the legal custody of the child prior to divorce coded as 0 if father, i.e. child custodial rights stays with father; 1 if Mother, i.e. child's custodial rights stays with the mother, and 2 if Situational/Either keeps, i.e. child stays with either parent with social/legal consent.

11. Remarriage of divorced women is a binary variable that captures a social norm that is coded as 1 of a wife is allowed to remarry after divorce, or even death of the husband, and coded as 0 otherwise, where such remarriages are not allowed or not acceptable in the society.

12. Descent is a binary variable that captures the tradition that is coded as 1 if the

matrilineal descent is practised where a person can be traced through the female line or female ancestors, i.e. Mother, mother's mother, mother's mother's mother and so forth. Female kins are selected to become a descendant after the mother. (Murdock, 1967). Otherwise, the variable takes a value 0 if the *patrilineal descent* is followed which can be traced through the male line, i.e. Father, grandfather, great-grandfather etc. Male kins are selected to become a descent after the father.

13. Inheritance norm is a categorical variable that captures the social norm and coded as 0 if equigeniture inheritance is observed when each kin inherits equal distribution of the inherited property and kind. Such inheritance does not resist on the gender basis and thus both male and female are eligible for the inheritance. (Murdock, 1967; Ritzer, 2007); 1 if male inheritance is practiced that is male primogeniture is followed where predominant inheritance is received by the senior male member of the category. It can be inferred as the inheritance by the first-born son or eldest son. (Murdock, 1967; Barnard and Spencer, 2009) or if male ultimogeniture is observed where predominant inheritance is received by the junior-most male member or the youngest son; and 2 if matrilineal inheritance, where the distribution of wealth and property is passed on through mother's line to next female kin of the category or if the female share is less than male share.

14. Plough is a binary variable that is coded as 0 if plough was absent and 1 if the plough is used in agriculture.

15. Agro-pastoral practices is a set of four subsistence patterns that capture in the form of four dummy variables if a people depend on *agriculture*, *gathering* of wild plants and small land fauna and the gathering of agricultural products as well; *hunting*, including trapping and fowling; *fishing*, including large aquatic animals and shell-fishing; *animal husbandry,* and *pastoralism* (Murdock, 1967) for their subsistence. In comparison to the Murdock's Atlas (1967), the data in the People of India (1994) is not granular as the latter does not indicate the extent to which people's livelihood is dependent on each subsistence categories.

16. Women's role in subsistence is a set of five dummy variables that signifies whether or not women in a specific tribe as a norm takes part in agricultural, gathering, hunting, fishing, husbandry, pastoralism, weaving, basketry, and politics or not.

17. Land ownership pattern is a categorical variable that is observed coded as 0 if private ownership of land is permissible as a social norm, where each family has its own control over a certain area of land; as 1 if society/community ownership of land is the prevailing norm, where land ownership rights are regulated under society or chief and 2 if communities are landless, where they do not possess any land.

18. Settlement patterns is a categorical variable that captures settlement types among the societies and coded as 0 if compact/relatively permanent settlement patterns are observed, that is where the societies have nucleated villages or towns; 1 if separated hamlets/semi-permanent/neighbourhoods dispersed households are observed, such that several dispersed societies which form a permanent single community, and 2 if *semi-nomadic or semi-sedentary* patterns are followed by tribes who wander at least half a year and occupy more or less a permanently settled space.

A4 Cultural determinants of domestic violence (Logit and Negative Binomial)

Table A4:Cultural Norms and Domestic Violence

Dependent variable:	**Women's sample**				**Men's sample**	
	Violence Ever	Violence Index	Violence Attitude	Violence Attitude Index	Violence Attitude	Violence Attitude Index
	Logit (1)	Neg.Bin. (2)	Logit (3)	Neg.Bin. (4)	Logit (5)	Neg.Bin. (6)
	Marriage Payments					
Marriage payments (reference category: neither brideprice nor dowry)						
Only **brideprice**, no dowry	0.028	0.158**	-0.116***	-0.354**	-0.202***	-0.690***
	(0.031)	(0.071)	(0.043)	(0.176)	(0.047)	(0.229)
Only **dowry**, no brideprice	0.027	0.134	0.033	0.545	0.030	0.452
	(0.052)	(0.113)	(0.061)	(0.429)	(0.077)	(0.624)
Both **brideprice and dowry**	-0.087	-0.173*	-0.266***	-0.827***	-0.215***	-0.323
	(0.056)	(0.095)	(0.079)	(0.181)	(0.078)	(0.209)
	Marriage Regulations					
Exogamy (reference category: endogamy)						
Clan Exogamy	0.052	0.135*	0.108*	0.311*	-0.101**	-0.587**
	(0.037)	(0.070)	(0.056)	(0.166)	(0.046)	(0.264)
Community Exogamy	0.094	0.294**	0.257***	0.623**	0.033	0.116
	(0.064)	(0.138)	(0.078)	(0.277)	(0.074)	(0.388)
Multiple exogamy	0.067	0.180*	0.180**	0.433*	-0.164**	-0.974***
	(0.058)	(0.103)	(0.082)	(0.228)	(0.067)	(0.355)
Intrafamily Marriages(reference category:no consanguinity)						
Consanguinity(Father's Sister's Daughter/Mother's Brother's Daughter/Sororate/Levirate)	0.010	-0.006	0.018	-0.044	0.043	-0.105
	(0.026)	(0.055)	(0.033)	(0.117)	(0.037)	(0.111)
Marriage Types (reference category: arranged marriage)						
Love Marriage	-0.033	-0.185***	0.087	0.386	-0.111*	-0.063
	(0.038)	(0.066)	(0.057)	(0.248)	(0.066)	(0.169)
Both Arranged and love Marriages	0.029	0.038	0.041	0.194*	-0.016	0.143
	(0.022)	(0.048)	(0.033)	(0.101)	(0.041)	(0.114)
Marriage Symbols (reference category: no marriage symbols)						
Marriage Symbols (Ornaments/Vermillion/Veil)	-0.035	-0.105	0.084*	0.271*	0.119**	0.303*
	(0.035)	(0.080)	(0.049)	(0.143)	(0.060)	(0.180)
Polygyny is acceptable=1, monogamy=0	-0.070	-0.149	-0.067	-0.395	-0.253***	-0.637***
	(0.062)	(0.132)	(0.077)	(0.276)	(0.068)	(0.241)
Post-Marital Residency Norms (reference category: Patri/Virilocal)						
Matri/Uxorilocal	-0.030	-0.082	-0.077	0.012	-0.283	-0.332
	(0.039)	(0.082)	(0.143)	(0.599)	(0.262)	(0.962)
Ambi/Bi/Duo/Neolocal	0.160***	0.500***	0.126***	0.526***	0.138***	0.478***
	(0.035)	(0.131)	(0.034)	(0.149)	(0.036)	(0.154)

Continued... Table A4

Dependent variable:	**Women's sample**				**Men's sample**	
	Violence Ever	Violence Index	Violence Attitude	Violence Attitude Index	Violence Attitude	Violence Attitude Index
	Logit	Neg.Bin.	Logit	Neg.Bin.	Logit	Neg.Bin.
	(1)	(2)	(3)	(4)	(5)	(6)
			Separation Norms			
Divorce Rules (reference category: Civil court divorce)						
Divorce by mutual consent	-0.069	-0.116	-0.079	-0.310	-0.073	0.023
	(0.048)	(0.115)	(0.056)	(0.324)	(0.069)	(0.209)
Divorce by Society's/Family's Approval	-0.140***	-0.281**	-0.079	-0.285	-0.113*	0.108
	(0.048)	(0.113)	(0.056)	(0.307)	(0.068)	(0.195)
Divorce is rare and discouraged	-0.034	-0.015	-0.031	-0.338	0.108	0.424*
	(0.042)	(0.102)	(0.053)	(0.301)	(0.071)	(0.229)
Wife is entitled to alimony=1; 0= not entitled	0.025	0.047	0.015	-0.237**	0.053	0.220
	(0.023)	(0.048)	(0.032)	(0.120)	(0.045)	(0.141)
Child Custody Customs (reference category: Neutral/ No ex-ante custody rules)						
Father keeps children	0.024	0.042	0.026	0.239*	-0.018	0.002
	(0.028)	(0.060)	(0.036)	(0.124)	(0.042)	(0.133)
Mother keeps children	0.039	-0.005	-0.089	-0.265	-0.141**	-0.421**
	(0.051)	(0.099)	(0.058)	(0.201)	(0.071)	(0.213)
Remarriage of divorced/widow is acceptable=1, zero else	-0.033	-0.123	-0.042	-0.236	-0.058	-0.367**
	(0.052)	(0.103)	(0.063)	(0.182)	(0.063)	(0.146)
			Lineage Norms			
Matrilineal descent=1, Patrilineal descent=0	0.082**	0.098	-0.052	-0.026	-0.045	-0.126
	(0.038)	(0.086)	(0.048)	(0.201)	(0.055)	(0.168)
Inheritance (reference category: equigeniture)						
male inheritance	-0.083**	-0.193***	0.001	0.156	0.024	0.141
	(0.034)	(0.066)	(0.040)	(0.150)	(0.047)	(0.137)
Female inheritance	-0.259***	-0.284**	-0.069	-0.150	-0.138	-0.327
	(0.058)	(0.142)	(0.140)	(0.468)	(0.122)	(0.220)
			Settlement Patterns			
Settlement patterns (reference category: compact, relatively permanent)						
Separated Hamlets/Semi-permanent/ Neighbourhoods dispersed households	-0.007	-0.012	-0.013	-0.007	-0.027	0.025
	(0.022)	(0.046)	(0.031)	(0.110)	(0.038)	(0.111)
Semi-nomadic 1/2 year; Semi-sedentary settlement	-0.092	-0.145	0.089	-0.009	-0.091	0.414
	(0.065)	(0.134)	(0.055)	(0.238)	(0.058)	(0.282)
Land ownership (reference category: Private ownership of land)						
Society/Community Ownership of land	-0.000	-0.020	-0.014	0.043	0.065**	0.182
	(0.032)	(0.070)	(0.048)	(0.157)	(0.031)	(0.116)
Landless/ marginal societies	-0.070**	-0.112*	-0.158**	-0.433*	0.069	0.152
	(0.034)	(0.061)	(0.075)	(0.223)	(0.076)	(0.416)

Continued... Table A4

	Women's sample				Men's sample	
Dependent variable:	Violence Ever	Violence Index	Violence Attitude	Violence Attitude Index	Violence Attitude	Violence Attitude Index
	Logit	Neg.Bin.	Logit	Neg.Bin.	Logit	Neg.Bin.
	(1)	(2)	(3)	(4)	(5)	(6)
Control variables:Community Level						
Plough is used in agriculture=1;	-0.001	-0.061	-0.093***	-0.251**	-0.099***	-0.332***
0=plough is absent	(0.020)	(0.043)	(0.031)	(0.104)	(0.037)	(0.123)
Dependence on agriculture(dummy)	-0.054	-0.169**	0.036	-0.043	0.047	-0.061
	(0.041)	(0.082)	(0.057)	(0.255)	(0.092)	(0.409)
Dependence on gathering(dummy)	0.034	-0.057	-0.032	-0.133	-0.204***	-0.647**
	(0.056)	(0.117)	(0.076)	(0.302)	(0.078)	(0.268)
Dependence on hunting &	-0.081***	-0.179***	0.023	-0.068	-0.062	-0.131
fishing(dummy)	(0.029)	(0.061)	(0.037)	(0.140)	(0.041)	(0.139)
Dependence on husbandry &	-0.034	-0.031	0.056	0.286	0.102**	0.416***
pastoralism(dummy)	(0.033)	(0.068)	(0.048)	(0.216)	(0.050)	(0.119)
Female participation in agriculture &	-0.017	-0.001	-0.047	-0.022	0.081	0.429**
gathering(dummy)	(0.035)	(0.072)	(0.041)	(0.178)	(0.052)	(0.200)
Female participation in hunting &	0.069***	0.106**	0.036	0.289**	0.018	0.372***
fishing(dummy)	(0.026)	(0.050)	(0.034)	(0.138)	(0.043)	(0.140)
Female participation in husbandry &	0.005	0.065	0.078**	0.219*	0.144***	0.328*
pastoralism(dummy)	(0.029)	(0.062)	(0.032)	(0.120)	(0.046)	(0.180)
Female participation in	-0.034	-0.079	-0.097**	-0.436***	0.041	0.096
handicrafts(dummy)	(0.030)	(0.066)	(0.040)	(0.133)	(0.043)	(0.151)
Female participation in	-0.025	-0.068	-0.199***	-0.760***	-0.145***	-0.353**
politics(dummy)	(0.034)	(0.076)	(0.049)	(0.167)	(0.055)	(0.173)
Control variables:Individual Level						
Age in years	-0.000	0.001	-0.001**	-0.004	-0.003***	-0.006***
	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.002)
Education in years	-0.007***	-0.017***	-0.004**	-0.022***	-0.007***	-0.023***
	(0.002)	(0.004)	(0.002)	(0.006)	(0.002)	(0.004)
Household size	0.003	0.008	0.004	0.018	-0.001	-0.008
	(0.003)	(0.008)	(0.003)	(0.011)	(0.003)	(0.006)
Wealth index	-0.024***	-0.067***	-0.030***	-0.125***	-0.020*	-0.078***
	(0.008)	(0.018)	(0.009)	(0.031)	(0.011)	(0.029)
Urbanity	0.030*	0.093**	0.016	-0.038	-0.004	-0.037
	(0.016)	(0.039)	(0.017)	(0.055)	(0.021)	(0.071)
Witnessed parental violence	0.165***	0.305***	0.088***	0.292***	0.112***	0.347***
	(0.011)	(0.035)	(0.030)	(0.096)	(0.023)	(0.065)
Nuclear/stem family	0.013	0.007	0.004	-0.030	-0.018	-0.099**
	(0.016)	(0.028)	(0.011)	(0.042)	(0.017)	(0.042)
Alcoholism	0.167***	0.416***	0.026**	0.055	0.038***	0.101**
	(0.017)	(0.056)	(0.012)	(0.042)	(0.013)	(0.042)
Number of communities (clusters)	118	118	118	118	118	118
Mean dependent variable	0.32	0.56	0.64	1.57	0.57	1.23
Observations	6766	6766	6772	6772	7667	7667

*Notes:*Cluster robust standard errors are reported in the parenthesis. ***, **, * denote statistical significance at the 1, 5 and 10 per cent levels, respectively. The marginal effects of Probit and Poisson models are shown in columns (1) to (6). The columns (1) to (4) pertains to women's sample and columns (5) and (6) represents men's sample.

11. Figures

Figure 1: Conceptual Framework

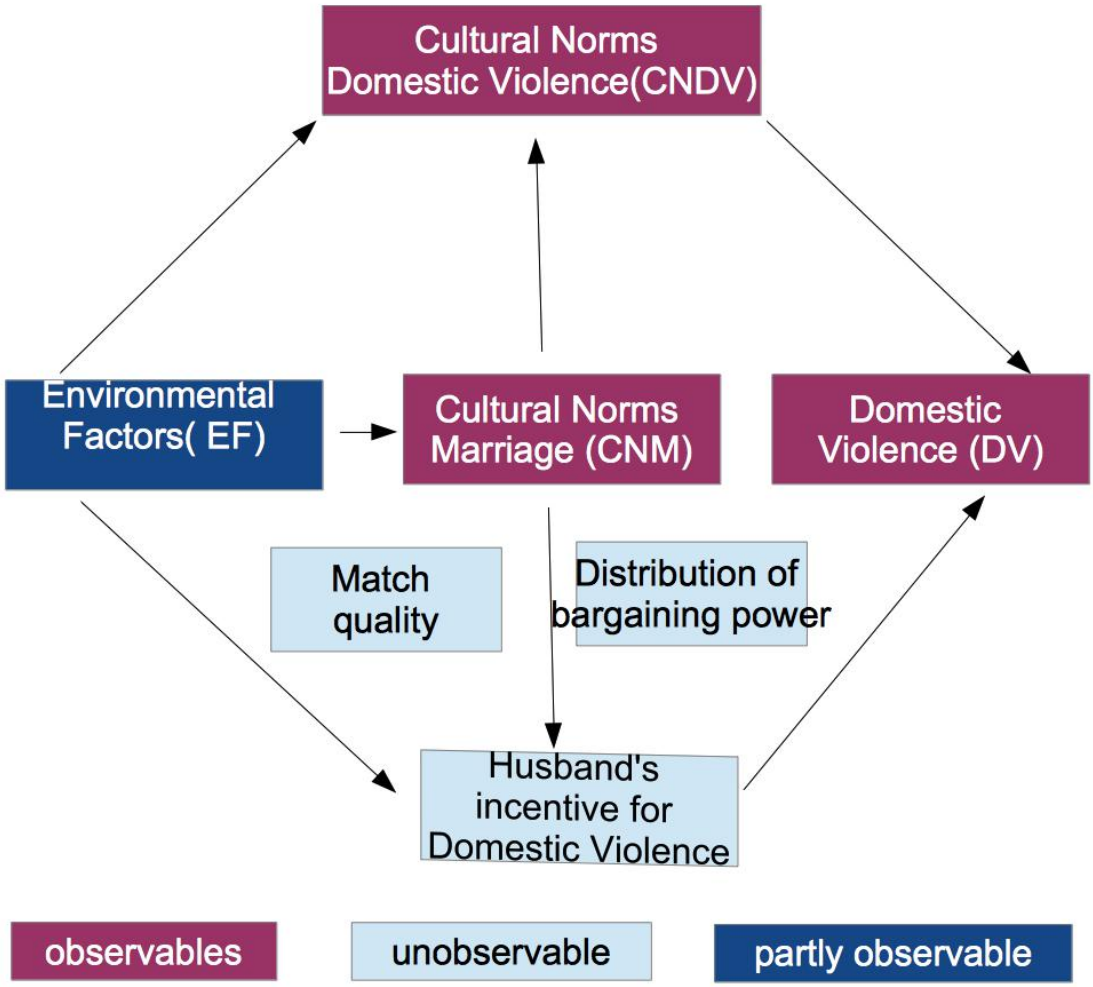

Figure 2: Data matching and merging process